

# SEQUENCE LISTING

<110> McCarthy, Sean A  
Barnes, Thomas M  
Fraser, Christopher C  
Sharp, John D

<120> NOVEL GENES ENCODING PROTEINS HAVING DIAGNOSTIC,  
PREVENTIVE, THERAPEUTIC, AND OTHER USES

<130> 210147.0023/6U1

<140> Not Yet Assigned

<141> 2000-05-24

<150> US 09/333,159

<151> 1999-06-14

<160> 79

<170> PatentIn Ver. 2.1

<210> 1

<211> 1656

<212> DNA

<213> Homo sapiens

<400> 1

```
gtcgacccac gcgctcgcgcc acgcgtccgg cccatggcgc cgcccgccgc ccgcctcgcc 60
ctgctctccg ccgcggcgct cacgctggcg gcccggccgc cgcctagccc cggcctcgcc 120
cccgaccccg agtggtttcac agccaatggt gcggattata ggggaacaca gaactggaca 180
gcactacaag gcgggaagcc atgtctgttt tggaacgaga ctttccagca tccatacaac 240
actctgaaat accccaacgg ggaggggggc ctgggtgagc acaactattg cagaaatcca 300
gatggagacg tgagcccctg gtgctatgtg gcagagcacg aggatggtgt ctactggaag 360
tactgtgaga tacctgcttg ccagatgcct ggaaaccttg gctgctacaa ggatcatgga 420
aaccacctc ctctaactgg caccagtaaa acgtccaaca aactcaccat acaaacttgc 480
atcagttttt gtcggagtca gaggttcaag tttgctggga tggagtcagg ctatgcttgc 540
ttctgtggaa acaatcctga ttactggaag tacggggagg cagccagtac cgaatgcaac 600
agcgtctgct tcgggggatca caccacccc tgtggtggcg atggcaggat catcctcttt 660
gatactctcg tgggcgcctg cgggtgggaac tactcagcca tgtcttctgt ggtctattcc 720
cctgacttcc ccgacaccta tgccacgggg agggctctgt actggacat ccgggttccg 780
ggggcctccc acatccaact cagcttcccc ctatttgaca tcagggactc ggcgacatg 840
gtggagcttc tggatggcta caccacccgt gtcctagccc gcttccacgg gaggagccgc 900
ccacctctgt ccttcaacgt ctctctggac ttctcatct tgtatttctt ctctgatcgc 960
atcaatcagg cccagggatt tgetgtttta taccaagccg tcaaggaaga actgccacag 1020
gagaggcccg ctgtcaacca gacggtggcc gaggtgatca cggagcaggc caacctcagt 1080
gtcagcgctg cccggtcctc caaagtcctc tatgtcatca ccaccagccc cagccacca 1140
cctcagactg tcccaggtag caattcctgg gcgccacca tgggggctgg aagccacaga 1200
```

05573063-052400

gttgaaggat	ggacagtcta	tggctctggca	actctcctca	tcctcacagt	cacagccatt	1260
gtagcaaaga	tacttctgca	cgtcacattc	aaatcccatc	gtgttcctgc	ttcaggggac	1320
cttagggatt	gtcatcaacc	agggaattcg	ggggaaatct	ggagcatttt	ttacaagcct	1380
tccacttcaa	tttccatctt	taagaagaaa	ctcaagggtc	agagtcaaca	agatgaccgc	1440
aatccccctg	tgagtgacta	aaaaccccac	tgtgcctagg	acttgaggtc	cctctttgag	1500
ctcaaggctg	ccgtgggtcaa	cctctcctgt	ggttcttctc	tgacagactc	ttccctcctc	1560
tcctctctgc	tcggcctctt	cggggaaacc	ctcctcctac	agactaggaa	gaggcacctg	1620
ctgccagggc	aggcagagcc	tggattcctc	ctgctt			1656

<210> 2

<211> 1425

<212> DNA

<213> Homo sapiens

<400> 2

atggcgccgc	ccgccgcccg	cctcgccctg	ctctccgccc	cggcgctcac	gctggcgggc	60
cggcccgcgc	ctagccccgg	cctcgcccc	ggaccgagt	gtttcacagc	caatggtgcg	120
gattataggg	gaacacagaa	ctggacagca	ctacaaggcg	ggaagccatg	tctgttttgg	180
aacgagactt	tccagcatcc	atacaacct	ctgaaatacc	ccaacgggga	ggggggcctg	240
ggtgagcaca	actattgcag	aaatccagat	ggagacgtga	gcccctggtg	ctatgtggca	300
gagcacgagg	atggtgtcta	ctggaagtac	tgtgagatac	ctgcttgcca	gatgcctgga	360
aaccttggtt	gctacaagga	tcatggaaac	ccacctctc	taactggcac	cagtaaaacg	420
tccaacaaac	tcaccataca	aacttgcac	agtttttgtc	ggagtcagag	gttcaagttt	480
gctgggatgg	agtcaggcta	tgcttgcttc	tgtggaaaca	atcctgatta	ctggaagtac	540
ggggaggcag	ccagtaccga	atgcaacagc	gtctgcttcg	gggatcacac	ccaaccctgt	600
ggtggcgatg	gcaggatcat	cctctttgat	actctcgtgg	gcgcctgcgg	tgggaactac	660
tcagccatgt	cttctgtggt	ctattcccc	gacttcccc	acacctatgc	cacggggagg	720
gtctgctact	ggaccatccg	ggttccgggg	gcctcccaca	tccacttcag	cttcccccta	780
tttgacatca	gggactcggc	ggacatggtg	gagcttcttg	atggctacac	ccaccgtgtc	840
ctagcccgtt	tccacgggag	gagccgcccc	cctctgtcct	tcaacgtctc	tctggacttc	900
gtcatcttgt	atttcttctc	tgatcgcac	aatcaggccc	agggatttgc	tgtttttatac	960
caagccgtca	aggaagaact	gccacaggag	aggcccgtg	tcaaccagac	ggtggccgag	1020
gtgatcacgg	agcaggccaa	cctcagtgtc	agcgtgccc	ggtcctcaa	agtcctctat	1080
gtcatcacca	ccagccccag	ccaccacct	cagactgtcc	caggtagcaa	ttcctgggcg	1140
ccacccatgg	gggctggaag	ccacagagtt	gaaggatgga	cagtctatgg	tctggcaact	1200
ctcctcatcc	tcacagtcac	agccattgta	gcaaagatac	ttctgcacgt	cacattcaaaa	1260
tcccatcgtg	ttcctgcttc	aggggacctt	agggattgtc	atcaaccagg	gacttcgggg	1320
gaaatctgga	gcatttttta	caagccttcc	acttcaattt	ccatctttaa	gaagaaactc	1380
aagggtcaga	gtcaacaaga	tgaccgcaat	ccccttgtga	gtgac		1425

<210> 3

<211> 475

<212> PRT

<213> Homo sapiens

<400> 3

Met Ala Pro Pro Ala Ala Arg Leu Ala Leu Leu Ser Ala Ala Ala Leu  
 1 5 10 15  
 Thr Leu Ala Ala Arg Pro Ala Pro Ser Pro Gly Leu Gly Pro Gly Pro  
 20 25 30  
 Glu Cys Phe Thr Ala Asn Gly Ala Asp Tyr Arg Gly Thr Gln Asn Trp  
 35 40 45  
 Thr Ala Leu Gln Gly Gly Lys Pro Cys Leu Phe Trp Asn Glu Thr Phe  
 50 55 60  
 Gln His Pro Tyr Asn Thr Leu Lys Tyr Pro Asn Gly Glu Gly Gly Leu  
 65 70 75 80  
 Gly Glu His Asn Tyr Cys Arg Asn Pro Asp Gly Asp Val Ser Pro Trp  
 85 90 95  
 Cys Tyr Val Ala Glu His Glu Asp Gly Val Tyr Trp Lys Tyr Cys Glu  
 100 105 110  
 Ile Pro Ala Cys Gln Met Pro Gly Asn Leu Gly Cys Tyr Lys Asp His  
 115 120 125  
 Gly Asn Pro Pro Pro Leu Thr Gly Thr Ser Lys Thr Ser Asn Lys Leu  
 130 135 140  
 Thr Ile Gln Thr Cys Ile Ser Phe Cys Arg Ser Gln Arg Phe Lys Phe  
 145 150 155 160  
 Ala Gly Met Glu Ser Gly Tyr Ala Cys Phe Cys Gly Asn Asn Pro Asp  
 165 170 175  
 Tyr Trp Lys Tyr Gly Glu Ala Ala Ser Thr Glu Cys Asn Ser Val Cys  
 180 185 190  
 Phe Gly Asp His Thr Gln Pro Cys Gly Gly Asp Gly Arg Ile Ile Leu  
 195 200 205  
 Phe Asp Thr Leu Val Gly Ala Cys Gly Gly Asn Tyr Ser Ala Met Ser  
 210 215 220  
 Ser Val Val Tyr Ser Pro Asp Phe Pro Asp Thr Tyr Ala Thr Gly Arg  
 225 230 235 240  
 Val Cys Tyr Trp Thr Ile Arg Val Pro Gly Ala Ser His Ile His Phe  
 245 250 255

09578063-052400

Ser Phe Pro Leu Phe Asp Ile Arg Asp Ser Ala Asp Met Val Glu Leu  
260 265 270

Leu Asp Gly Tyr Thr His Arg Val Leu Ala Arg Phe His Gly Arg Ser  
275 280 285

Arg Pro Pro Leu Ser Phe Asn Val Ser Leu Asp Phe Val Ile Leu Tyr  
290 295 300

Phe Phe Ser Asp Arg Ile Asn Gln Ala Gln Gly Phe Ala Val Leu Tyr  
305 310 315 320

Gln Ala Val Lys Glu Glu Leu Pro Gln Glu Arg Pro Ala Val Asn Gln  
325 330 335

Thr Val Ala Glu Val Ile Thr Glu Gln Ala Asn Leu Ser Val Ser Ala  
340 345 350

Ala Arg Ser Ser Lys Val Leu Tyr Val Ile Thr Thr Ser Pro Ser His  
355 360 365

Pro Pro Gln Thr Val Pro Gly Ser Asn Ser Trp Ala Pro Pro Met Gly  
370 375 380

Ala Gly Ser His Arg Val Glu Gly Trp Thr Val Tyr Gly Leu Ala Thr  
385 390 395 400

Leu Leu Ile Leu Thr Val Thr Ala Ile Val Ala Lys Ile Leu Leu His  
405 410 415

Val Thr Phe Lys Ser His Arg Val Pro Ala Ser Gly Asp Leu Arg Asp  
420 425 430

Cys His Gln Pro Gly Thr Ser Gly Glu Ile Trp Ser Ile Phe Tyr Lys  
435 440 445

Pro Ser Thr Ser Ile Ser Ile Phe Lys Lys Lys Leu Lys Gly Gln Ser  
450 455 460

Gln Gln Asp Asp Arg Asn Pro Leu Val Ser Asp  
465 470 475

<210> 4

<211> 19

<212> PRT

<213> Homo sapiens

<400> 4

Met Ala Pro Pro Ala Ala Arg Leu Ala Leu Leu Ser Ala Ala Ala Leu  
1 5 10 15

Thr Leu Ala

<210> 5

<211> 456

<212> PRT

<213> Homo sapiens

<400> 5

Ala Arg Pro Ala Pro Ser Pro Gly Leu Gly Pro Gly Pro Glu Cys Phe  
1 5 10 15

Thr Ala Asn Gly Ala Asp Tyr Arg Gly Thr Gln Asn Trp Thr Ala Leu  
20 25 30

Gln Gly Gly Lys Pro Cys Leu Phe Trp Asn Glu Thr Phe Gln His Pro  
35 40 45

Tyr Asn Thr Leu Lys Tyr Pro Asn Gly Glu Gly Gly Leu Gly Glu His  
50 55 60

Asn Tyr Cys Arg Asn Pro Asp Gly Asp Val Ser Pro Trp Cys Tyr Val  
65 70 75 80

Ala Glu His Glu Asp Gly Val Tyr Trp Lys Tyr Cys Glu Ile Pro Ala  
85 90 95

Cys Gln Met Pro Gly Asn Leu Gly Cys Tyr Lys Asp His Gly Asn Pro  
100 105 110

Pro Pro Leu Thr Gly Thr Ser Lys Thr Ser Asn Lys Leu Thr Ile Gln  
115 120 125

Thr Cys Ile Ser Phe Cys Arg Ser Gln Arg Phe Lys Phe Ala Gly Met  
130 135 140

Glu Ser Gly Tyr Ala Cys Phe Cys Gly Asn Asn Pro Asp Tyr Trp Lys  
145 150 155 160

Tyr Gly Glu Ala Ala Ser Thr Glu Cys Asn Ser Val Cys Phe Gly Asp  
165 170 175

His Thr Gln Pro Cys Gly Gly Asp Gly Arg Ile Ile Leu Phe Asp Thr

09573063-052400

001250"052400

180	185	190
Leu Val Gly Ala Cys Gly Gly Asn Tyr Ser Ala Met Ser Ser Val Val		
195	200	205
Tyr Ser Pro Asp Phe Pro Asp Thr Tyr Ala Thr Gly Arg Val Cys Tyr		
210	215	220
Trp Thr Ile Arg Val Pro Gly Ala Ser His Ile His Phe Ser Phe Pro		
225	230	235
Leu Phe Asp Ile Arg Asp Ser Ala Asp Met Val Glu Leu Leu Asp Gly		
245	250	255
Tyr Thr His Arg Val Leu Ala Arg Phe His Gly Arg Ser Arg Pro Pro		
260	265	270
Leu Ser Phe Asn Val Ser Leu Asp Phe Val Ile Leu Tyr Phe Phe Ser		
275	280	285
Asp Arg Ile Asn Gln Ala Gln Gly Phe Ala Val Leu Tyr Gln Ala Val		
290	295	300
Lys Glu Glu Leu Pro Gln Glu Arg Pro Ala Val Asn Gln Thr Val Ala		
305	310	315
Glu Val Ile Thr Glu Gln Ala Asn Leu Ser Val Ser Ala Ala Arg Ser		
325	330	335
Ser Lys Val Leu Tyr Val Ile Thr Thr Ser Pro Ser His Pro Pro Gln		
340	345	350
Thr Val Pro Gly Ser Asn Ser Trp Ala Pro Pro Met Gly Ala Gly Ser		
355	360	365
His Arg Val Glu Gly Trp Thr Val Tyr Gly Leu Ala Thr Leu Leu Ile		
370	375	380 .
Leu Thr Val Thr Ala Ile Val Ala Lys Ile Leu Leu His Val Thr Phe		
385	390	395
Lys Ser His Arg Val Pro Ala Ser Gly Asp Leu Arg Asp Cys His Gln		
405	410	415
Pro Gly Thr Ser Gly Glu Ile Trp Ser Ile Phe Tyr Lys Pro Ser Thr		
420	425	430
Ser Ile Ser Ile Phe Lys Lys Lys Leu Lys Gly Gln Ser Gln Gln Asp		

435

440

445

Asp Arg Asn Pro Leu Val Ser Asp  
450 455

&lt;210&gt; 6

&lt;211&gt; 373

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 6

Ala Arg Pro Ala Pro Ser Pro Gly Leu Gly Pro Gly Pro Glu Cys Phe  
1 5 10 15

Thr Ala Asn Gly Ala Asp Tyr Arg Gly Thr Gln Asn Trp Thr Ala Leu  
20 25 30

Gln Gly Gly Lys Pro Cys Leu Phe Trp Asn Glu Thr Phe Gln His Pro  
35 40 45

Tyr Asn Thr Leu Lys Tyr Pro Asn Gly Glu Gly Gly Leu Gly Glu His  
50 55 60

Asn Tyr Cys Arg Asn Pro Asp Gly Asp Val Ser Pro Trp Cys Tyr Val  
65 70 75 80

Ala Glu His Glu Asp Gly Val Tyr Trp Lys Tyr Cys Glu Ile Pro Ala  
85 90 95

Cys Gln Met Pro Gly Asn Leu Gly Cys Tyr Lys Asp His Gly Asn Pro  
100 105 110

Pro Pro Leu Thr Gly Thr Ser Lys Thr Ser Asn Lys Leu Thr Ile Gln  
115 120 125

Thr Cys Ile Ser Phe Cys Arg Ser Gln Arg Phe Lys Phe Ala Gly Met  
130 135 140

Glu Ser Gly Tyr Ala Cys Phe Cys Gly Asn Asn Pro Asp Tyr Trp Lys  
145 150 155 160

Tyr Gly Glu Ala Ala Ser Thr Glu Cys Asn Ser Val Cys Phe Gly Asp  
165 170 175

His Thr Gln Pro Cys Gly Gly Asp Gly Arg Ile Ile Leu Phe Asp Thr  
180 185 190

Leu Val Gly Ala Cys Gly Gly Asn Tyr Ser Ala Met Ser Ser Val Val  
 195 200 205  
 Tyr Ser Pro Asp Phe Pro Asp Thr Tyr Ala Thr Gly Arg Val Cys Tyr  
 210 215 220  
 Trp Thr Ile Arg Val Pro Gly Ala Ser His Ile His Phe Ser Phe Pro  
 225 230 235 240  
 Leu Phe Asp Ile Arg Asp Ser Ala Asp Met Val Glu Leu Leu Asp Gly  
 245 250 255  
 Tyr Thr His Arg Val Leu Ala Arg Phe His Gly Arg Ser Arg Pro Pro  
 260 265 270  
 Leu Ser Phe Asn Val Ser Leu Asp Phe Val Ile Leu Tyr Phe Phe Ser  
 275 280 285  
 Asp Arg Ile Asn Gln Ala Gln Gly Phe Ala Val Leu Tyr Gln Ala Val  
 290 295 300  
 Lys Glu Glu Leu Pro Gln Glu Arg Pro Ala Val Asn Gln Thr Val Ala  
 305 310 315 320  
 Glu Val Ile Thr Glu Gln Ala Asn Leu Ser Val Ser Ala Ala Arg Ser  
 325 330 335  
 Ser Lys Val Leu Tyr Val Ile Thr Thr Ser Pro Ser His Pro Pro Gln  
 340 345 350  
 Thr Val Pro Gly Ser Asn Ser Trp Ala Pro Pro Met Gly Ala Gly Ser  
 355 360 365  
 His Arg Val Glu Gly  
 370

<210> 7

<211> 23

<212> PRT

<213> Homo sapiens

<400> 7

Trp Thr Val Tyr Gly Leu Ala Thr Leu Leu Ile Leu Thr Val Thr Ala  
 1 5 10 15

Ile Val Ala Lys Ile Leu Leu  
 20



<210> 8  
 <211> 60  
 <212> PRT  
 <213> Homo sapiens

<400> 8  
 His Val Thr Phe Lys Ser His Arg Val Pro Ala Ser Gly Asp Leu Arg  
 1 5 10 15  
 Asp Cys His Gln Pro Gly Thr Ser Gly Glu Ile Trp Ser Ile Phe Tyr  
 20 25 30  
 Lys Pro Ser Thr Ser Ile Ser Ile Phe Lys Lys Lys Leu Lys Gly Gln  
 35 40 45  
 Ser Gln Gln Asp Asp Arg Asn Pro Leu Val Ser Asp  
 50 55 60

<210> 9  
 <211> 4628  
 <212> DNA  
 <213> Homo sapiens

<400> 9  
 gcggccgctc gcgatctaga actagtaatg atgctgcctc aaaactcgtg gcatattgat 60  
 tttggaagat gctgctgtca tcagaacctt ttctctgctg tggtaacttg catcctgctc 120  
 ctgaattcct gcttttctcat cagcagtttt aatggaacag atttggagtt gaggctggtc 180  
 aatggagacg gtccctgctc tgggacagtg gaggtgaaat tccagggaca gtgggggact 240  
 gtgtgtgatg atgggtggaa cactactgcc tcaactgtcg tgtgcaaaca gcttggatgt 300  
 ccatttttctt tcgccatgtt tcgttttggg caagccgtga ctagacatgg aaaaatttgg 360  
 cttgatgatg tttcctgtta tggaaatgag tcagctctct gggaatgtca acaccgggaa 420  
 tggggaagcc ataactgtta tcatggagaa gatgttggtg tgaactgtta tggatgaagcc 480  
 aatctgggtt tgaggctagt ggatggaaac aactcctgtt caggagagat ggaggtgaaa 540  
 ttccaagaaa ggtgggggac tatatgtgat gatgggtgga acttgaatac tgctgccctg 600  
 gtgtgcaggc aactaggatg tccatcttct tttatttctt ctggagttgt taatagccct 660  
 gctgtattgc gcccatttg gctggatgac attttatgcc aggggaatga gttggcactc 720  
 tggaattgca gacatcgtgg atggggaaat catgactgca gtcacaatga ggatgtcaca 780  
 ttaacttgtt atgatatag tagatctttaa ctaaggcttg taggtggaac taaccgctgt 840  
 atggggagag tagagctgaa aatccaagga aggtggggga ccgtatgcca ccataagtgg 900  
 aacaatgctg cagctgatgt cgtatgcaag cagttgggat gtggaaccgc acttcacttc 960  
 gctggcttgc ctcatcttgc gtcagggtct gatgttgat ggcttgatgg tgtctcctgc 1020  
 tccggtaatg aatcttttct ttgggactgc agacattccg gaaccgtcaa ttttgactgt 1080  
 cttcatcaaaa acgatgtgtc tgtgatctgc tcagatggag cagatttgga actgcgacta 1140  
 gcagatggaa gtaacaattg ttcagggaga gtagaggtga gaattcatga acagtgtgtg 1200  
 acaatatgtg accagaactg gaagaatgaa caagcccttg tggtttgtaa gcagctagga 1260

09573063-052400

tgtccgttca gcgtctttgg cagtcgtcgt gctaaaccta gtaatgaagc tagagacatt 1320  
 tggataaaca gcatatcttg cactgggaat gagtcagctc tctgggactg cacatatgat 1380  
 ggaaaagcaa agcgaacatg cttccgaaga tcagatgctg gagtaatttg ttctgataag 1440  
 gcagatctgg acctaaggct tgtcggggct catagcccct gttatgggag attggagggtg 1500  
 aaataccaag gagagtgggg gactgtgtgt catgacagat ggagcacaag gaatgcagct 1560  
 gttgtgtgta aacaattggg atgtggaaag cctatgcatg tgtttggtat gacctatttt 1620  
 aaagaagcat caggacctat ttggctggat gacgtttctt gcattggaaa tgagtcaaatt 1680  
 atctgggact gtgaacacag tggatgggga aagcataatt gtgtacacag agaggatgtg 1740  
 attgtaacct gctcaggtga tgcaacatgg ggcctgaggc tgggtggcgg cagcaaccgc 1800  
 tgctcgggaa gactggaggt gtactttcaa ggacggtggg gcacagtgtg tgatgacggc 1860  
 tggaacagta aagctgcagc tgtggtgtgt agccagctgg actgcccac ttctatcatt 1920  
 ggcattgggtc tgggaaacgc ttctacagga tatggaaaaa tttggctcga tgatgtttcc 1980  
 tgtgatggag atgagtcaga tctctggtca tgcaggaaca gtgggtgggg aaataatgac 2040  
 tgcagtcaca gtgaagatgt tggagtgatc tgttctgatg catcggatat ggagctgagg 2100  
 cttgtgggtg gaagcagcag gtgtgctgga aaagttagag tgaatgtcca gggtgccgtg 2160  
 ggaattctgt gtgctaattg ctggggaatg aacattgctg aagttgtttg caggcaactt 2220  
 gaatgtgggt ctgcaatcag ggtctccaga gagcctcatt tcacagaaaag aacattacac 2280  
 atcttaatgt cgaattctgg ctgcaactgga ggggaagcct ctctctggga ttgtatacga 2340  
 tgggagtggg aacagactgc gtgtcattta aatatggaag caagtttgat ctgctcagcc 2400  
 cacaggcagc ccaggctggg tggagctgat atgcctgct ctggacgtgt tgaagtgaag 2460  
 catgcagaca catggcgctc tgtctgtgat tctgatttct ctcttcacgc tgccaatgtg 2520  
 ctgtgcagag aattaaattg tggagatgcc atatctcttt ctgtgggaga tcactttgga 2580  
 aaagggaaat gtctaacttg ggccgaaaag ttccagtgtg aaggagtgga aactcacctt 2640  
 gcattatgcc ccattgttca acatccgga gacacttgta tccacagcag agaagttgga 2700  
 gttgtctgtt cccgatatac agatgtccga cttgtgaatg gcaaattccca gtgtgacggg 2760  
 caagtggaga tcaacgtgct tggacactgg ggctcactgt gtgacacca ctgggacca 2820  
 gaagatgccc gtgttctatg cagacagctc agctgtggga ctgctctctc aaccacagga 2880  
 ggaaaatata ttggagaaaag aagtgttcgt gtgtggggac acaggtttca ttgcttaggg 2940  
 aatgagtcac ttctggataa ctgtcaaatg acagtctctg gagcacctcc ctgtatccat 3000  
 ggaaatactg tctctgtgat ctgcacagga agcctgacct agccactgtt tccatgcctc 3060  
 gcaaattgat ctgaccataa tttgtctgca gttccagagg gcagtgtctt gatctgtcta 3120  
 gaggacaaac ggctccgcct agtggatggg gacagccgct gtgccgggag agtagagatc 3180  
 tatcacgacg gcttctgggg caccatctgt gatgacggct gggacctgag cgatgccac 3240  
 gtggtgtgtc aaaagctggg ctgtggagtg gccttcaatg ccacggtctc tgctcacttt 3300  
 ggggaggggt cagggcccat ctggctggat gacctgaact gcacaggaac ggagtccac 3360  
 ttgtggcagt gcccttcccg cggtcggggg cagcacgact gcaggcacaac ggaggacgca 3420  
 ggggtcatct gctcagaatt cacagccttg aggccttaca gtgaaactga aacagagagc 3480  
 tgtgtctggg gattggaagt cttctataac gggacctggg gcagcgtcgg caggaggaac 3540  
 atcaccacag ccatagcagg cattgtgtgc aggcagctgg gctgtgggga gaatggagtt 3600  
 gtcagcctcg cccctttatc taagacaggc tctggtttca tgtgggtgga tgacattcag 3660  
 tgtcctaaaa cgcatatctc catatggcag tgctgtctg ccccatggga gcgaagaatc 3720  
 tccagcccag cagaagagac ctggatcaca tgtgaagata gaataagagt gcgtggagga 3780  
 gacaccgagt gctctgggag agtggagatc tggcacgag gctcctgggg cacagtgtgt 3840  
 gatgactcct gggacctggc cgaggcggaa gtggtgtgtc agcagctggg ctgtggctct 3900  
 gctctggctg ccctgagggg cgcttcgttt ggccagggaa ctggaaccat ctggttggat 3960  
 gacatgcggt gcaaaggaaa tgagtcatct ctatgggact gtcacgcca accctgggga 4020  
 cagagtgact gtggacacaa ggaagatgct ggcgtgaggt gctctggaca gtcgctgaaa 4080  
 tcaactgaatg cctcctcagg tcatttagca cttattttat ccagtatctt tgggctcctt 4140

ctcctggttc tgtttattct atttctcacg tggcgccgag ttcagaaaca aaaacatctg 4200  
cccctcagag tttcaaccag aaggaggggt tctctcgagg agaatttatt ccatgagatg 4260  
gagacctgcc tcaagagaga ggacccacat gggacaagaa cctcagatga ccccccaac 4320  
catggttggtg aagatgctag cgacacatcg ctgttgggag ttcttcctgc ctctgaagcc 4380  
acaaaatgac tttagacttc cagggctcac cagatcaacc tctaaatatac tttgaaggag 4440  
acaacaactt ttaaataaat aaagaggaag tcaagttgcc ctatggaaaa cttgtccaaa 4500  
taacatttct tgaacaatag gagaacagct aaattgataa agactggtga taataaaaaat 4560  
tgaattatgt atatcactgt taaaaaaaaa aaaaaaaaaa aaaaaaaaaa acggacgcgt 4620  
gggtcgac 4628

<210> 10

<211> 4359

<212> DNA

<213> Homo sapiens

<400> 10

atgatgctgc ctcaaaactc gtggcatatt gattttggaa gatgctgctg tcatcagaac 60  
cttttctctg ctgtggtaac ttgcatcctg ctcctgaatt cctgctttct catcagcagt 120  
tttaatggaa cagatttgga gttgaggtcg gtcaatggag acggtccctg ctctgggaca 180  
gtggaggtga aattccaggg acagtggggg actgtgtgtg atgatgggtg gaacactact 240  
gcctcaactg tctgtgtcaa acagcttggg tgtccatitt ctttcgccat gtttcgtttt 300  
ggacaagccg tgactagaca tggaaaaatt tggcttgatg atgtttcctg ttatggaaat 360  
gagtcagctc tctgggaatg tcaacaccgg gaatggggaa gccataactg ttatcatgga 420  
gaagatgttg gtgtgaactg ttatggtgaa gccaatctgg gtttgaggct agtggatgga 480  
aacaactcct gttcaggag agtggaggtg aaattccaag aaaggtgggg gactatatgt 540  
gatgatgggt ggaacttgaa tactgctgcc gtggtgtgca ggcaactagg atgtccatct 600  
tcttttattt cttctggagt tgtaataagc cctgctgtat tgcgccccat ttggctggat 660  
gacattttat gccaggggaa tgagttggca ctctggaatt gcagacatcg tggatgggga 720  
aatcatgact gcagtcacaa tgaggatgtc acattaactt gttatgatag tagtgatctt 780  
gaactaaggc ttgtaggtgg aactaaccgc tgtatgggga gagtagagct gaaaatccaa 840  
ggaaggtggg ggaccgtatg ccaccataag tggacaatg ctgcagctga tgtcgtatgc 900  
aagcagttgg gatgtggaac cgcaactcac ttcgctggct tgcctcattt gcagtcaggg 960  
tctgatgttg tatggcttga tgggtgtctc tgctccggta atgaatcttt tctttgggac 1020  
tgcagacatt ccggaaccgt caattttgac tgtcttcac aaaacgatgt gtctgtgatc 1080  
tgctcagatg gagcagattt ggaactgcga ctagcagatg gaagtaacaa ttgttcaggg 1140  
agagtagagg tgagaattca tgaacagtgg tggacaatat gtgaccagaa ctggaagaat 1200  
gaacaagccc ttgtggtttg taagcagcta ggatgtccgt tcagcgtctt tggcagtcgt 1260  
cgtgctaaac ctagtaatat agctagagac atttgataa acagcatatc ttgcactggg 1320  
aatgagtcag ctctctggga ctgcacatat gatggaaaag caaagcgaac atgcttccga 1380  
agatcagatg ctggagtaat ttgttctgat aaggcagatc tggacctaa gcttgtcggg 1440  
gctcatagcc cctgttatgg gagattggag gtgaaatacc aaggagagtg ggggactgtg 1500  
tgtcatgaca gatggagcac aaggaatgca gctgttgtgt gtaaacaatt gggatgtgga 1560  
aagcctatgc atgtgtttgg tatgacctat tttaaagaag catcaggacc tatttggtctg 1620  
gatgacgttt cttgcattgg aaatgagtc aatatctggg actgtgaaca cagtggatgg 1680  
ggaaagcata attgtgtaca cagagaggat gtgattgtaa cctgctcagg tgatgcaaca 1740  
tggggcctga ggctggtggg cggcagcaac cgctgctcgg gaagactgga ggtgtacttt 1800  
caaggacggt ggggcacagt gtgtgatgac ggctggaaca gtaaagctgc agctgtggtg 1860

tgtagccagc	tggactgccc	atcttctatc	attggcatgg	gtctgggaaa	cgcttctaca	1920
ggatatggaa	aaatttggct	cgatgatgtt	tcctgtgatg	gagatgagtc	agatctctgg	1980
tcatgcagga	acagtgggtg	gggaaataat	gactgcagtc	acagtgaaga	tgttggagtg	2040
atctgttctg	atgcatcgga	tatggagctg	aggcttgtgg	gtggaagcag	caggtgtgct	2100
ggaaaagtgt	aggtgaatgt	ccagggtgcc	gtgggaattc	tgtgtgctaa	tggctgggga	2160
atgaacattg	ctgaagttgt	ttgcaggcaa	cttgaatgtg	ggtctgcaat	cagggctctcc	2220
agagagcctc	atttcacaga	aagaacatta	cacatcttaa	tgtcgaattc	tggctgcact	2280
ggaggggaag	cctctctctg	ggattgtata	cgatgggagt	ggaaacagac	tgcgtgtcat	2340
ttaaatatgg	aagcaagttt	gatctgctca	gcccacaggc	agcccaggct	ggttgaggct	2400
gatatgccct	gctctggacg	tgttgaagtg	aaacatgcag	acacatggcg	ctctgtctgt	2460
gattctgatt	tctctcttca	tgctgccaat	gtgctgtgca	gagaattaaa	ttgtggagat	2520
gccatatctc	tttctgtggg	agatcacttt	ggaaaaggga	atggtctaac	ttgggccgaa	2580
aagttccagt	gtgaagggag	tgaaaactcac	cttgccattat	gccccattgt	tcaacatccg	2640
gaagacactt	gtatccacag	cagagaagtt	ggagttgtct	gttcccagata	tacagatgtc	2700
cgacttgtga	atggcaaadc	ccagtgtgac	gggcaagtgg	agatcaacgt	gcttggacac	2760
tggggctcac	tgtgtgacac	ccactgggac	ccagaagatg	cccgtgttct	atgcagacag	2820
ctcagctgtg	ggactgctct	ctcaaccaca	ggaggaaaat	atattggaga	aagaagtgtt	2880
cgtgtgtggg	gacacagggt	tcattgctta	gggaatgagt	cacttctgga	taactgtcaa	2940
atgacagttc	ttggagcacc	tccctgtatc	catggaaata	ctgtctctgt	gatctgcaca	3000
ggaagcctga	cccagccact	gtttccatgc	ctcgcaaata	tatctgaccc	atatttgtct	3060
gcagttccag	agggcagtg	tttgatctgc	ttagaggaca	aacggctccg	cctagtggat	3120
ggggacagcc	gctgtgccgg	gagagtagag	atctatcacg	acggcttctg	gggcaccatc	3180
tgtgatgacg	gctgggacct	gagcgatgcc	cacgtgggtg	gtcaaaaagct	gggctgtgga	3240
gtggccttca	atgccacggt	ctctgtctac	tttggggagg	ggtcagggcc	catctggctg	3300
gatgacctga	actgcacagg	aacggagtcc	cacttgtggc	agtgcccttc	ccgcggctgg	3360
gggcagcacg	actgcaggca	caaggaggac	gcaggggtca	tctgctcaga	attcacagcc	3420
ttgaggctct	acagtgaaac	tgaacacagag	agctgtgctg	ggagattgga	agtcttctat	3480
aacgggacct	ggggcagcgt	cggcaggagg	aacatcacca	cagccatagc	aggcattgtg	3540
tgagggcagc	tgggctgtgg	ggagaatgga	gttgctcagc	tcgccccttt	atctaagaca	3600
ggctctggtt	tcatgtgggt	ggatgacatt	cagtgtccta	aaacgcatat	ctccatatgg	3660
cagtgcctgt	ctgccccatg	ggagcgaaga	atctccagcc	cagcagaaga	gacctggatc	3720
acatgtgaag	atagaataag	agtgcgtgga	ggagacaccg	agtgtctctg	gagagtggag	3780
atctggcacg	caggctcctg	gggcacagtg	tgtgatgact	cctgggacct	ggccgaggcg	3840
gaagtgggtg	gtcagcagct	gggctgtggc	tctgctctgg	ctgccctgag	ggacgcttcg	3900
tttggccagg	gaactggaac	catctgggtg	gatgacatgc	ggtgcaaagg	aaatgagtca	3960
tttctatggg	actgtcacgc	caaaccttgg	ggacagagtg	actgtggaca	caagggaagat	4020
gctggcgtga	ggtgctctgg	acagtcgctg	aaatcactga	atgcctcctc	aggtcattta	4080
gcacttattt	tatccagtat	ctttgggctc	cttctcctgg	ttctgtttat	tctatttctc	4140
acgtggtgcc	gagttcagaa	acaaaaacat	ctgcccctca	gagtttcaac	cagaaggagg	4200
ggttctctcg	aggagaattt	attccatgag	atggagacct	gcctcaagag	agaggaccca	4260
catgggacaa	gaacctcaga	tgacaccccc	aacctatggt	gtgaagatgc	tagcgacaca	4320
tcgctgttgg	gagttcttcc	tgccctctgaa	gccacaaaa			4359

&lt;210&gt; 11

&lt;211&gt; 1453

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

<400> 11

Met Met Leu Pro Gln Asn Ser Trp His Ile Asp Phe Gly Arg Cys Cys  
1 5 10 15

Cys His Gln Asn Leu Phe Ser Ala Val Val Thr Cys Ile Leu Leu Leu  
20 25 30

Asn Ser Cys Phe Leu Ile Ser Ser Phe Asn Gly Thr Asp Leu Glu Leu  
35 40 45

Arg Leu Val Asn Gly Asp Gly Pro Cys Ser Gly Thr Val Glu Val Lys  
50 55 60

Phe Gln Gly Gln Trp Gly Thr Val Cys Asp Asp Gly Trp Asn Thr Thr  
65 70 75 80

Ala Ser Thr Val Val Cys Lys Gln Leu Gly Cys Pro Phe Ser Phe Ala  
85 90 95

Met Phe Arg Phe Gly Gln Ala Val Thr Arg His Gly Lys Ile Trp Leu  
100 105 110

Asp Asp Val Ser Cys Tyr Gly Asn Glu Ser Ala Leu Trp Glu Cys Gln  
115 120 125

His Arg Glu Trp Gly Ser His Asn Cys Tyr His Gly Glu Asp Val Gly  
130 135 140

Val Asn Cys Tyr Gly Glu Ala Asn Leu Gly Leu Arg Leu Val Asp Gly  
145 150 155 160

Asn Asn Ser Cys Ser Gly Arg Val Glu Val Lys Phe Gln Glu Arg Trp  
165 170 175

Gly Thr Ile Cys Asp Asp Gly Trp Asn Leu Asn Thr Ala Ala Val Val  
180 185 190

Cys Arg Gln Leu Gly Cys Pro Ser Ser Phe Ile Ser Ser Gly Val Val  
195 200 205

Asn Ser Pro Ala Val Leu Arg Pro Ile Trp Leu Asp Asp Ile Leu Cys  
210 215 220

Gln Gly Asn Glu Leu Ala Leu Trp Asn Cys Arg His Arg Gly Trp Gly  
225 230 235 240

Asn His Asp Cys Ser His Asn Glu Asp Val Thr Leu Thr Cys Tyr Asp

245																250				255			
Ser	Ser	Asp	Leu	Glu	Leu	Arg	Leu	Val	Gly	Gly	Thr	Asn	Arg	Cys	Met								
			260				265						270										
Gly	Arg	Val	Glu	Leu	Lys	Ile	Gln	Gly	Arg	Trp	Gly	Thr	Val	Cys	His								
			275				280						285										
His	Lys	Trp	Asn	Asn	Ala	Ala	Ala	Asp	Val	Val	Cys	Lys	Gln	Leu	Gly								
			290				295						300										
Cys	Gly	Thr	Ala	Leu	His	Phe	Ala	Gly	Leu	Pro	His	Leu	Gln	Ser	Gly								
305				310						315			320										
Ser	Asp	Val	Val	Trp	Leu	Asp	Gly	Val	Ser	Cys	Ser	Gly	Asn	Glu	Ser								
			325						330			335											
Phe	Leu	Trp	Asp	Cys	Arg	His	Ser	Gly	Thr	Val	Asn	Phe	Asp	Cys	Leu								
			340						345			350											
His	Gln	Asn	Asp	Val	Ser	Val	Ile	Cys	Ser	Asp	Gly	Ala	Asp	Leu	Glu								
			355						360			365											
Leu	Arg	Leu	Ala	Asp	Gly	Ser	Asn	Asn	Cys	Ser	Gly	Arg	Val	Glu	Val								
			370			375						380											
Arg	Ile	His	Glu	Gln	Trp	Trp	Thr	Ile	Cys	Asp	Gln	Asn	Trp	Lys	Asn								
385				390						395			400										
Glu	Gln	Ala	Leu	Val	Val	Cys	Lys	Gln	Leu	Gly	Cys	Pro	Phe	Ser	Val								
			405						410			415											
Phe	Gly	Ser	Arg	Arg	Ala	Lys	Pro	Ser	Asn	Glu	Ala	Arg	Asp	Ile	Trp								
			420						425			430											
Ile	Asn	Ser	Ile	Ser	Cys	Thr	Gly	Asn	Glu	Ser	Ala	Leu	Trp	Asp	Cys								
			435						440			445											
Thr	Tyr	Asp	Gly	Lys	Ala	Lys	Arg	Thr	Cys	Phe	Arg	Arg	Ser	Asp	Ala								
			450			455						460											
Gly	Val	Ile	Cys	Ser	Asp	Lys	Ala	Asp	Leu	Asp	Leu	Arg	Leu	Val	Gly								
465				470						475			480										
Ala	His	Ser	Pro	Cys	Tyr	Gly	Arg	Leu	Glu	Val	Lys	Tyr	Gln	Gly	Glu								
			485						490			495											
Trp	Gly	Thr	Val	Cys	His	Asp	Arg	Trp	Ser	Thr	Arg	Asn	Ala	Ala	Val								

09578063 052400

500	505	510
Val Cys Lys Gln Leu Gly Cys Gly Lys Pro Met His Val Phe Gly Met		
515	520	525
Thr Tyr Phe Lys Glu Ala Ser Gly Pro Ile Trp Leu Asp Asp Val Ser		
530	535	540
Cys Ile Gly Asn Glu Ser Asn Ile Trp Asp Cys Glu His Ser Gly Trp		
545	550	555
Gly Lys His Asn Cys Val His Arg Glu Asp Val Ile Val Thr Cys Ser		
565	570	575
Gly Asp Ala Thr Trp Gly Leu Arg Leu Val Gly Gly Ser Asn Arg Cys		
580	585	590
Ser Gly Arg Leu Glu Val Tyr Phe Gln Gly Arg Trp Gly Thr Val Cys		
595	600	605
Asp Asp Gly Trp Asn Ser Lys Ala Ala Ala Val Val Cys Ser Gln Leu		
610	615	620
Asp Cys Pro Ser Ser Ile Ile Gly Met Gly Leu Gly Asn Ala Ser Thr		
625	630	635
Gly Tyr Gly Lys Ile Trp Leu Asp Asp Val Ser Cys Asp Gly Asp Glu		
645	650	655
Ser Asp Leu Trp Ser Cys Arg Asn Ser Gly Trp Gly Asn Asn Asp Cys		
660	665	670
Ser His Ser Glu Asp Val Gly Val Ile Cys Ser Asp Ala Ser Asp Met		
675	680	685
Glu Leu Arg Leu Val Gly Gly Ser Ser Arg Cys Ala Gly Lys Val Glu		
690	695	700
Val Asn Val Gln Gly Ala Val Gly Ile Leu Cys Ala Asn Gly Trp Gly		
705	710	715
Met Asn Ile Ala Glu Val Val Cys Arg Gln Leu Glu Cys Gly Ser Ala		
725	730	735
Ile Arg Val Ser Arg Glu Pro His Phe Thr Glu Arg Thr Leu His Ile		
740	745	750
Leu Met Ser Asn Ser Gly Cys Thr Gly Gly Glu Ala Ser Leu Trp Asp		

09573063.052400

755	760	765
Cys Ile Arg Trp Glu Trp Lys Gln Thr Ala Cys His Leu Asn Met Glu		
770	775	780
Ala Ser Leu Ile Cys Ser Ala His Arg Gln Pro Arg Leu Val Gly Ala		
785	790	795
800		
Asp Met Pro Cys Ser Gly Arg Val Glu Val Lys His Ala Asp Thr Trp		
805	810	815
Arg Ser Val Cys Asp Ser Asp Phe Ser Leu His Ala Ala Asn Val Leu		
820	825	830
Cys Arg Glu Leu Asn Cys Gly Asp Ala Ile Ser Leu Ser Val Gly Asp		
835	840	845
His Phe Gly Lys Gly Asn Gly Leu Thr Trp Ala Glu Lys Phe Gln Cys		
850	855	860
Glu Gly Ser Glu Thr His Leu Ala Leu Cys Pro Ile Val Gln His Pro		
865	870	875
880		
Glu Asp Thr Cys Ile His Ser Arg Glu Val Gly Val Val Cys Ser Arg		
885	890	895
Tyr Thr Asp Val Arg Leu Val Asn Gly Lys Ser Gln Cys Asp Gly Gln		
900	905	910
Val Glu Ile Asn Val Leu Gly His Trp Gly Ser Leu Cys Asp Thr His		
915	920	925
Trp Asp Pro Glu Asp Ala Arg Val Leu Cys Arg Gln Leu Ser Cys Gly		
930	935	940
Thr Ala Leu Ser Thr Thr Gly Gly Lys Tyr Ile Gly Glu Arg Ser Val		
945	950	955
960		
Arg Val Trp Gly His Arg Phe His Cys Leu Gly Asn Glu Ser Leu Leu		
965	970	975
Asp Asn Cys Gln Met Thr Val Leu Gly Ala Pro Pro Cys Ile His Gly		
980	985	990
Asn Thr Val Ser Val Ile Cys Thr Gly Ser Leu Thr Gln Pro Leu Phe		
995	1000	1005
Pro Cys Leu Ala Asn Val Ser Asp Pro Tyr Leu Ser Ala Val Pro Glu		



1010					1015					1020									
Gly	Ser	Ala	Leu	Ile	Cys	Leu	Glu	Asp	Lys	Arg	Leu	Arg	Leu	Val	Asp				
1025					1030					1035					1040				
Gly	Asp	Ser	Arg	Cys	Ala	Gly	Arg	Val	Glu	Ile	Tyr	His	Asp	Gly	Phe				
					1045					1050					1055				
Trp	Gly	Thr	Ile	Cys	Asp	Asp	Gly	Trp	Asp	Leu	Ser	Asp	Ala	His	Val				
					1060					1065					1070				
Val	Cys	Gln	Lys	Leu	Gly	Cys	Gly	Val	Ala	Phe	Asn	Ala	Thr	Val	Ser				
					1075					1080					1085				
Ala	His	Phe	Gly	Glu	Gly	Ser	Gly	Pro	Ile	Trp	Leu	Asp	Asp	Leu	Asn				
					1090					1095					1100				
Cys	Thr	Gly	Thr	Glu	Ser	His	Leu	Trp	Gln	Cys	Pro	Ser	Arg	Gly	Trp				
1105					1110					1115					1120				
Gly	Gln	His	Asp	Cys	Arg	His	Lys	Glu	Asp	Ala	Gly	Val	Ile	Cys	Ser				
					1125					1130					1135				
Glu	Phe	Thr	Ala	Leu	Arg	Leu	Tyr	Ser	Glu	Thr	Glu	Thr	Glu	Ser	Cys				
					1140					1145					1150				
Ala	Gly	Arg	Leu	Glu	Val	Phe	Tyr	Asn	Gly	Thr	Trp	Gly	Ser	Val	Gly				
1155					1160					1165									
Arg	Arg	Asn	Ile	Thr	Thr	Ala	Ile	Ala	Gly	Ile	Val	Cys	Arg	Gln	Leu				
1170					1175					1180									
Gly	Cys	Gly	Glu	Asn	Gly	Val	Val	Ser	Leu	Ala	Pro	Leu	Ser	Lys	Thr				
1185					1190					1195					1200				
Gly	Ser	Gly	Phe	Met	Trp	Val	Asp	Asp	Ile	Gln	Cys	Pro	Lys	Thr	His				
					1205					1210					1215				
Ile	Ser	Ile	Trp	Gln	Cys	Leu	Ser	Ala	Pro	Trp	Glu	Arg	Arg	Ile	Ser				
					1220					1225					1230				
Ser	Pro	Ala	Glu	Glu	Thr	Trp	Ile	Thr	Cys	Glu	Asp	Arg	Ile	Arg	Val				
1235					1240					1245									
Arg	Gly	Gly	Asp	Thr	Glu	Cys	Ser	Gly	Arg	Val	Glu	Ile	Trp	His	Ala				
1250					1255					1260									
Gly	Ser	Trp	Gly	Thr	Val	Cys	Asp	Asp	Ser	Trp	Asp	Leu	Ala	Glu	Ala				

1265                      1270                      1275                      1280  
 Glu Val Val Cys Gln Gln Leu Gly Cys Gly Ser Ala Leu Ala Ala Leu  
                                  1285                      1290                      1295  
 Arg Asp Ala Ser Phe Gly Gln Gly Thr Gly Thr Ile Trp Leu Asp Asp  
                                  1300                      1305                      1310  
 Met Arg Cys Lys Gly Asn Glu Ser Phe Leu Trp Asp Cys His Ala Lys  
                                  1315                      1320                      1325  
 Pro Trp Gly Gln Ser Asp Cys Gly His Lys Glu Asp Ala Gly Val Arg  
                                  1330                      1335                      1340  
 Cys Ser Gly Gln Ser Leu Lys Ser Leu Asn Ala Ser Ser Gly His Leu  
 1345                      1350                      1355                      1360  
 Ala Leu Ile Leu Ser Ser Ile Phe Gly Leu Leu Leu Leu Val Leu Phe  
                                  1365                      1370                      1375  
 Ile Leu Phe Leu Thr Trp Cys Arg Val Gln Lys Gln Lys His Leu Pro  
                                  1380                      1385                      1390  
 Leu Arg Val Ser Thr Arg Arg Arg Gly Ser Leu Glu Glu Asn Leu Phe  
                                  1395                      1400                      1405  
 His Glu Met Glu Thr Cys Leu Lys Arg Glu Asp Pro His Gly Thr Arg  
                                  1410                      1415                      1420  
 Thr Ser Asp Asp Thr Pro Asn His Gly Cys Glu Asp Ala Ser Asp Thr  
 1425                      1430                      1435                      1440  
 Ser Leu Leu Gly Val Leu Pro Ala Ser Glu Ala Thr Lys  
                                  1445                      1450

<210> 12

<211> 40

<212> PRT

<213> Homo sapiens

<400> 12

Met Met Leu Pro Gln Asn Ser Trp His Ile Asp Phe Gly Arg Cys Cys  
   1                                  5                                  10                                  15

Cys His Gln Asn Leu Phe Ser Ala Val Val Thr Cys Ile Leu Leu Leu  
                                   20                                  25                                  30

Asn Ser Cys Phe Leu Ile Ser Ser  
 35 40

<210> 13  
 <211> 1413  
 <212> PRT  
 <213> Homo sapiens

<400> 13  
 Phe Asn Gly Thr Asp Leu Glu Leu Arg Leu Val Asn Gly Asp Gly Pro  
 1 5 10 15  
 Cys Ser Gly Thr Val Glu Val Lys Phe Gln Gly Gln Trp Gly Thr Val  
 20 25 30  
 Cys Asp Asp Gly Trp Asn Thr Thr Ala Ser Thr Val Val Cys Lys Gln  
 35 40 45  
 Leu Gly Cys Pro Phe Ser Phe Ala Met Phe Arg Phe Gly Gln Ala Val  
 50 55 60  
 Thr Arg His Gly Lys Ile Trp Leu Asp Asp Val Ser Cys Tyr Gly Asn  
 65 70 75 80  
 Glu Ser Ala Leu Trp Glu Cys Gln His Arg Glu Trp Gly Ser His Asn  
 85 90 95  
 Cys Tyr His Gly Glu Asp Val Gly Val Asn Cys Tyr Gly Glu Ala Asn  
 100 105 110  
 Leu Gly Leu Arg Leu Val Asp Gly Asn Asn Ser Cys Ser Gly Arg Val  
 115 120 125  
 Glu Val Lys Phe Gln Glu Arg Trp Gly Thr Ile Cys Asp Asp Gly Trp  
 130 135 140  
 Asn Leu Asn Thr Ala Ala Val Val Cys Arg Gln Leu Gly Cys Pro Ser  
 145 150 155 160  
 Ser Phe Ile Ser Ser Gly Val Val Asn Ser Pro Ala Val Leu Arg Pro  
 165 170 175  
 Ile Trp Leu Asp Asp Ile Leu Cys Gln Gly Asn Glu Leu Ala Leu Trp  
 180 185 190  
 Asn Cys Arg His Arg Gly Trp Gly Asn His Asp Cys Ser His Asn Glu  
 195 200 205

Asp Val Thr Leu Thr Cys Tyr Asp Ser Ser Asp Leu Glu Leu Arg Leu  
 210 215 220  
 Val Gly Gly Thr Asn Arg Cys Met Gly Arg Val Glu Leu Lys Ile Gln  
 225 230 235 240  
 Gly Arg Trp Gly Thr Val Cys His His Lys Trp Asn Asn Ala Ala Ala  
 245 250 255  
 Asp Val Val Cys Lys Gln Leu Gly Cys Gly Thr Ala Leu His Phe Ala  
 260 265 270  
 Gly Leu Pro His Leu Gln Ser Gly Ser Asp Val Val Trp Leu Asp Gly  
 275 280 285  
 Val Ser Cys Ser Gly Asn Glu Ser Phe Leu Trp Asp Cys Arg His Ser  
 290 295 300  
 Gly Thr Val Asn Phe Asp Cys Leu His Gln Asn Asp Val Ser Val Ile  
 305 310 315 320  
 Cys Ser Asp Gly Ala Asp Leu Glu Leu Arg Leu Ala Asp Gly Ser Asn  
 325 330 335  
 Asn Cys Ser Gly Arg Val Glu Val Arg Ile His Glu Gln Trp Trp Thr  
 340 345 350  
 Ile Cys Asp Gln Asn Trp Lys Asn Glu Gln Ala Leu Val Val Cys Lys  
 355 360 365  
 Gln Leu Gly Cys Pro Phe Ser Val Phe Gly Ser Arg Arg Ala Lys Pro  
 370 375 380  
 Ser Asn Glu Ala Arg Asp Ile Trp Ile Asn Ser Ile Ser Cys Thr Gly  
 385 390 395 400  
 Asn Glu Ser Ala Leu Trp Asp Cys Thr Tyr Asp Gly Lys Ala Lys Arg  
 405 410 415  
 Thr Cys Phe Arg Arg Ser Asp Ala Gly Val Ile Cys Ser Asp Lys Ala  
 420 425 430  
 Asp Leu Asp Leu Arg Leu Val Gly Ala His Ser Pro Cys Tyr Gly Arg  
 435 440 445  
 Leu Glu Val Lys Tyr Gln Gly Glu Trp Gly Thr Val Cys His Asp Arg  
 450 455 460

05573063 053400

Trp	Ser	Thr	Arg	Asn	Ala	Ala	Val	Val	Cys	Lys	Gln	Leu	Gly	Cys	Gly	
465					470					475					480	
Lys	Pro	Met	His	Val	Phe	Gly	Met	Thr	Tyr	Phe	Lys	Glu	Ala	Ser	Gly	
				485					490					495		
Pro	Ile	Trp	Leu	Asp	Asp	Val	Ser	Cys	Ile	Gly	Asn	Glu	Ser	Asn	Ile	
			500					505					510			
Trp	Asp	Cys	Glu	His	Ser	Gly	Trp	Gly	Lys	His	Asn	Cys	Val	His	Arg	
		515					520					525				
Glu	Asp	Val	Ile	Val	Thr	Cys	Ser	Gly	Asp	Ala	Thr	Trp	Gly	Leu	Arg	
	530					535					540					
Leu	Val	Gly	Gly	Ser	Asn	Arg	Cys	Ser	Gly	Arg	Leu	Glu	Val	Tyr	Phe	
545					550					555					560	
Gln	Gly	Arg	Trp	Gly	Thr	Val	Cys	Asp	Asp	Gly	Trp	Asn	Ser	Lys	Ala	
				565					570					575		
Ala	Ala	Val	Val	Cys	Ser	Gln	Leu	Asp	Cys	Pro	Ser	Ser	Ile	Ile	Gly	
			580					585					590			
Met	Gly	Leu	Gly	Asn	Ala	Ser	Thr	Gly	Tyr	Gly	Lys	Ile	Trp	Leu	Asp	
		595					600					605				
Asp	Val	Ser	Cys	Asp	Gly	Asp	Glu	Ser	Asp	Leu	Trp	Ser	Cys	Arg	Asn	
	610					615					620					
Ser	Gly	Trp	Gly	Asn	Asn	Asp	Cys	Ser	His	Ser	Glu	Asp	Val	Gly	Val	
625					630					635					640	
Ile	Cys	Ser	Asp	Ala	Ser	Asp	Met	Glu	Leu	Arg	Leu	Val	Gly	Gly	Ser	
				645					650					655		
Ser	Arg	Cys	Ala	Gly	Lys	Val	Glu	Val	Asn	Val	Gln	Gly	Ala	Val	Gly	
			660					665				670				
Ile	Leu	Cys	Ala	Asn	Gly	Trp	Gly	Met	Asn	Ile	Ala	Glu	Val	Val	Cys	
		675					680					685				
Arg	Gln	Leu	Glu	Cys	Gly	Ser	Ala	Ile	Arg	Val	Ser	Arg	Glu	Pro	His	
		690				695					700					
Phe	Thr	Glu	Arg	Thr	Leu	His	Ile	Leu	Met	Ser	Asn	Ser	Gly	Cys	Thr	
705					710				715					720		

Gly Gly Glu Ala Ser Leu Trp Asp Cys Ile Arg Trp Glu Trp Lys Gln  
 725 730 735  
 Thr Ala Cys His Leu Asn Met Glu Ala Ser Leu Ile Cys Ser Ala His  
 740 745 750  
 Arg Gln Pro Arg Leu Val Gly Ala Asp Met Pro Cys Ser Gly Arg Val  
 755 760 765  
 Glu Val Lys His Ala Asp Thr Trp Arg Ser Val Cys Asp Ser Asp Phe  
 770 775 780  
 Ser Leu His Ala Ala Asn Val Leu Cys Arg Glu Leu Asn Cys Gly Asp  
 785 790 795 800  
 Ala Ile Ser Leu Ser Val Gly Asp His Phe Gly Lys Gly Asn Gly Leu  
 805 810 815  
 Thr Trp Ala Glu Lys Phe Gln Cys Glu Gly Ser Glu Thr His Leu Ala  
 820 825 830  
 Leu Cys Pro Ile Val Gln His Pro Glu Asp Thr Cys Ile His Ser Arg  
 835 840 845  
 Glu Val Gly Val Val Cys Ser Arg Tyr Thr Asp Val Arg Leu Val Asn  
 850 855 860  
 Gly Lys Ser Gln Cys Asp Gly Gln Val Glu Ile Asn Val Leu Gly His  
 865 870 875 880  
 Trp Gly Ser Leu Cys Asp Thr His Trp Asp Pro Glu Asp Ala Arg Val  
 885 890 895  
 Leu Cys Arg Gln Leu Ser Cys Gly Thr Ala Leu Ser Thr Thr Gly Gly  
 900 905 910  
 Lys Tyr Ile Gly Glu Arg Ser Val Arg Val Trp Gly His Arg Phe His  
 915 920 925  
 Cys Leu Gly Asn Glu Ser Leu Leu Asp Asn Cys Gln Met Thr Val Leu  
 930 935 940  
 Gly Ala Pro Pro Cys Ile His Gly Asn Thr Val Ser Val Ile Cys Thr  
 945 950 955 960  
 Gly Ser Leu Thr Gln Pro Leu Phe Pro Cys Leu Ala Asn Val Ser Asp  
 965 970 975

Pro Tyr Leu Ser Ala Val Pro Glu Gly Ser Ala Leu Ile Cys Leu Glu  
 980 985 990  
 Asp Lys Arg Leu Arg Leu Val Asp Gly Asp Ser Arg Cys Ala Gly Arg  
 995 1000 1005  
 Val Glu Ile Tyr His Asp Gly Phe Trp Gly Thr Ile Cys Asp Asp Gly  
 1010 1015 1020  
 Trp Asp Leu Ser Asp Ala His Val Val Cys Gln Lys Leu Gly Cys Gly  
 1025 1030 1035 1040  
 Val Ala Phe Asn Ala Thr Val Ser Ala His Phe Gly Glu Gly Ser Gly  
 1045 1050 1055  
 Pro Ile Trp Leu Asp Asp Leu Asn Cys Thr Gly Thr Glu Ser His Leu  
 1060 1065 1070  
 Trp Gln Cys Pro Ser Arg Gly Trp Gly Gln His Asp Cys Arg His Lys  
 1075 1080 1085  
 Glu Asp Ala Gly Val Ile Cys Ser Glu Phe Thr Ala Leu Arg Leu Tyr  
 1090 1095 1100  
 Ser Glu Thr Glu Thr Glu Ser Cys Ala Gly Arg Leu Glu Val Phe Tyr  
 1105 1110 1115 1120  
 Asn Gly Thr Trp Gly Ser Val Gly Arg Arg Asn Ile Thr Thr Ala Ile  
 1125 1130 1135  
 Ala Gly Ile Val Cys Arg Gln Leu Gly Cys Gly Glu Asn Gly Val Val  
 1140 1145 1150  
 Ser Leu Ala Pro Leu Ser Lys Thr Gly Ser Gly Phe Met Trp Val Asp  
 1155 1160 1165  
 Asp Ile Gln Cys Pro Lys Thr His Ile Ser Ile Trp Gln Cys Leu Ser  
 1170 1175 1180  
 Ala Pro Trp Glu Arg Arg Ile Ser Ser Pro Ala Glu Glu Thr Trp Ile  
 1185 1190 1195 1200  
 Thr Cys Glu Asp Arg Ile Arg Val Arg Gly Gly Asp Thr Glu Cys Ser  
 1205 1210 1215  
 Gly Arg Val Glu Ile Trp His Ala Gly Ser Trp Gly Thr Val Cys Asp  
 1220 1225 1230

Asp Ser Trp Asp Leu Ala Glu Ala Glu Val Val Cys Gln Gln Leu Gly  
 1235 1240 1245

Cys Gly Ser Ala Leu Ala Ala Leu Arg Asp Ala Ser Phe Gly Gln Gly  
 1250 1255 1260

Thr Gly Thr Ile Trp Leu Asp Asp Met Arg Cys Lys Gly Asn Glu Ser  
 1265 1270 1275 1280

Phe Leu Trp Asp Cys His Ala Lys Pro Trp Gly Gln Ser Asp Cys Gly  
 1285 1290 1295

His Lys Glu Asp Ala Gly Val Arg Cys Ser Gly Gln Ser Leu Lys Ser  
 1300 1305 1310

Leu Asn Ala Ser Ser Gly His Leu Ala Leu Ile Leu Ser Ser Ile Phe  
 1315 1320 1325

Gly Leu Leu Leu Leu Val Leu Phe Ile Leu Phe Leu Thr Trp Cys Arg  
 1330 1335 1340

Val Gln Lys Gln Lys His Leu Pro Leu Arg Val Ser Thr Arg Arg Arg  
 1345 1350 1355 1360

Gly Ser Leu Glu Glu Asn Leu Phe His Glu Met Glu Thr Cys Leu Lys  
 1365 1370 1375

Arg Glu Asp Pro His Gly Thr Arg Thr Ser Asp Asp Thr Pro Asn His  
 1380 1385 1390

Gly Cys Glu Asp Ala Ser Asp Thr Ser Leu Leu Gly Val Leu Pro Ala  
 1395 1400 1405

Ser Glu Ala Thr Lys  
 1410

<210> 14

<211> 1319

<212> PRT

<213> Homo sapiens

<400> 14

Phe Asn Gly Thr Asp Leu Glu Leu Arg Leu Val Asn Gly Asp Gly Pro  
 1 5 10 15

Cys Ser Gly Thr Val Glu Val Lys Phe Gln Gly Gln Trp Gly Thr Val

09578063-052400





004250" E9082560

275	280	285
Val Ser Cys Ser Gly Asn Glu Ser Phe Leu Trp Asp Cys Arg His Ser		
290	295	300
Gly Thr Val Asn Phe Asp Cys Leu His Gln Asn Asp Val Ser Val Ile		
305	310	315
Cys Ser Asp Gly Ala Asp Leu Glu Leu Arg Leu Ala Asp Gly Ser Asn		
	325	330
Asn Cys Ser Gly Arg Val Glu Val Arg Ile His Glu Gln Trp Trp Thr		
	340	345
Ile Cys Asp Gln Asn Trp Lys Asn Glu Gln Ala Leu Val Val Cys Lys		
	355	360
Gln Leu Gly Cys Pro Phe Ser Val Phe Gly Ser Arg Arg Ala Lys Pro		
	370	375
Ser Asn Glu Ala Arg Asp Ile Trp Ile Asn Ser Ile Ser Cys Thr Gly		
385	390	395
Asn Glu Ser Ala Leu Trp Asp Cys Thr Tyr Asp Gly Lys Ala Lys Arg		
	405	410
Thr Cys Phe Arg Arg Ser Asp Ala Gly Val Ile Cys Ser Asp Lys Ala		
	420	425
Asp Leu Asp Leu Arg Leu Val Gly Ala His Ser Pro Cys Tyr Gly Arg		
	435	440
Leu Glu Val Lys Tyr Gln Gly Glu Trp Gly Thr Val Cys His Asp Arg		
	450	455
Trp Ser Thr Arg Asn Ala Ala Val Val Cys Lys Gln Leu Gly Cys Gly		
465	470	475
Lys Pro Met His Val Phe Gly Met Thr Tyr Phe Lys Glu Ala Ser Gly		
	485	490
Pro Ile Trp Leu Asp Asp Val Ser Cys Ile Gly Asn Glu Ser Asn Ile		
	500	505
Trp Asp Cys Glu His Ser Gly Trp Gly Lys His Asn Cys Val His Arg		
	515	520
Glu Asp Val Ile Val Thr Cys Ser Gly Asp Ala Thr Trp Gly Leu Arg		

004250" E9032560

530		535		540
Leu Val Gly Gly Ser Asn Arg Cys Ser Gly Arg Leu Glu Val Tyr Phe				
545		550		555
				560
Gln Gly Arg Trp Gly Thr Val Cys Asp Asp Gly Trp Asn Ser Lys Ala				
	565		570	575
Ala Ala Val Val Cys Ser Gln Leu Asp Cys Pro Ser Ser Ile Ile Gly				
	580		585	590
Met Gly Leu Gly Asn Ala Ser Thr Gly Tyr Gly Lys Ile Trp Leu Asp				
	595		600	605
Asp Val Ser Cys Asp Gly Asp Glu Ser Asp Leu Trp Ser Cys Arg Asn				
	610		615	620
Ser Gly Trp Gly Asn Asn Asp Cys Ser His Ser Glu Asp Val Gly Val				
625		630		635
				640
Ile Cys Ser Asp Ala Ser Asp Met Glu Leu Arg Leu Val Gly Gly Ser				
	645		650	655
Ser Arg Cys Ala Gly Lys Val Glu Val Asn Val Gln Gly Ala Val Gly				
	660		665	670
Ile Leu Cys Ala Asn Gly Trp Gly Met Asn Ile Ala Glu Val Val Cys				
	675		680	685
Arg Gln Leu Glu Cys Gly Ser Ala Ile Arg Val Ser Arg Glu Pro His				
	690		695	700
Phe Thr Glu Arg Thr Leu His Ile Leu Met Ser Asn Ser Gly Cys Thr				
705		710		715
				720
Gly Gly Glu Ala Ser Leu Trp Asp Cys Ile Arg Trp Glu Trp Lys Gln				
	725		730	735
Thr Ala Cys His Leu Asn Met Glu Ala Ser Leu Ile Cys Ser Ala His				
	740		745	750
Arg Gln Pro Arg Leu Val Gly Ala Asp Met Pro Cys Ser Gly Arg Val				
	755		760	765
Glu Val Lys His Ala Asp Thr Trp Arg Ser Val Cys Asp Ser Asp Phe				
	770		775	780
Ser Leu His Ala Ala Asn Val Leu Cys Arg Glu Leu Asn Cys Gly Asp				

004250 " E9082560

785		790		795		800
Ala Ile Ser Leu Ser Val Gly Asp His Phe Gly Lys Gly Asn Gly Leu						
	805			810		815
Thr Trp Ala Glu Lys Phe Gln Cys Glu Gly Ser Glu Thr His Leu Ala						
	820			825		830
Leu Cys Pro Ile Val Gln His Pro Glu Asp Thr Cys Ile His Ser Arg						
	835			840		845
Glu Val Gly Val Val Cys Ser Arg Tyr Thr Asp Val Arg Leu Val Asn						
	850			855		860
Gly Lys Ser Gln Cys Asp Gly Gln Val Glu Ile Asn Val Leu Gly His						
	865			870		875
Trp Gly Ser Leu Cys Asp Thr His Trp Asp Pro Glu Asp Ala Arg Val						
	885			890		895
Leu Cys Arg Gln Leu Ser Cys Gly Thr Ala Leu Ser Thr Thr Gly Gly						
	900			905		910
Lys Tyr Ile Gly Glu Arg Ser Val Arg Val Trp Gly His Arg Phe His						
	915			920		925
Cys Leu Gly Asn Glu Ser Leu Leu Asp Asn Cys Gln Met Thr Val Leu						
	930			935		940
Gly Ala Pro Pro Cys Ile His Gly Asn Thr Val Ser Val Ile Cys Thr						
	945			950		955
Gly Ser Leu Thr Gln Pro Leu Phe Pro Cys Leu Ala Asn Val Ser Asp						
	965			970		975
Pro Tyr Leu Ser Ala Val Pro Glu Gly Ser Ala Leu Ile Cys Leu Glu						
	980			985		990
Asp Lys Arg Leu Arg Leu Val Asp Gly Asp Ser Arg Cys Ala Gly Arg						
	995			1000		1005
Val Glu Ile Tyr His Asp Gly Phe Trp Gly Thr Ile Cys Asp Asp Gly						
	1010			1015		1020
Trp Asp Leu Ser Asp Ala His Val Val Cys Gln Lys Leu Gly Cys Gly						
	1025			1030		1035
						1040
Val Ala Phe Asn Ala Thr Val Ser Ala His Phe Gly Glu Gly Ser Gly						

004250" E9087560

1045	1050	1055
Pro Ile Trp Leu Asp Asp Leu Asn Cys Thr Gly Thr Glu Ser His Leu		
1060	1065	1070
Trp Gln Cys Pro Ser Arg Gly Trp Gly Gln His Asp Cys Arg His Lys		
1075	1080	1085
Glu Asp Ala Gly Val Ile Cys Ser Glu Phe Thr Ala Leu Arg Leu Tyr		
1090	1095	1100
Ser Glu Thr Glu Thr Glu Ser Cys Ala Gly Arg Leu Glu Val Phe Tyr		
1105	1110	1115
Asn Gly Thr Trp Gly Ser Val Gly Arg Arg Asn Ile Thr Thr Ala Ile		
1125	1130	1135
Ala Gly Ile Val Cys Arg Gln Leu Gly Cys Gly Glu Asn Gly Val Val		
1140	1145	1150
Ser Leu Ala Pro Leu Ser Lys Thr Gly Ser Gly Phe Met Trp Val Asp		
1155	1160	1165
Asp Ile Gln Cys Pro Lys Thr His Ile Ser Ile Trp Gln Cys Leu Ser		
1170	1175	1180
Ala Pro Trp Glu Arg Arg Ile Ser Ser Pro Ala Glu Glu Thr Trp Ile		
1185	1190	1195
Thr Cys Glu Asp Arg Ile Arg Val Arg Gly Gly Asp Thr Glu Cys Ser		
1205	1210	1215
Gly Arg Val Glu Ile Trp His Ala Gly Ser Trp Gly Thr Val Cys Asp		
1220	1225	1230
Asp Ser Trp Asp Leu Ala Glu Ala Glu Val Val Cys Gln Gln Leu Gly		
1235	1240	1245
Cys Gly Ser Ala Leu Ala Ala Leu Arg Asp Ala Ser Phe Gly Gln Gly		
1250	1255	1260
Thr Gly Thr Ile Trp Leu Asp Asp Met Arg Cys Lys Gly Asn Glu Ser		
1265	1270	1275
Phe Leu Trp Asp Cys His Ala Lys Pro Trp Gly Gln Ser Asp Cys Gly		
1285	1290	1295
His Lys Glu Asp Ala Gly Val Arg Cys Ser Gly Gln Ser Leu Lys Ser		

09573063.052400

1300

1305

1310

Leu Asn Ala Ser Ser Gly His  
1315

<210> 15

<211> 24

<212> PRT

<213> Homo sapiens

<400> 15

Leu Ala Leu Ile Leu Ser Ser Ile Phe Gly Leu Leu Leu Leu Val Leu  
1 5 10 15

Phe Ile Leu Phe Leu Thr Trp Cys  
20

<210> 16

<211> 70

<212> PRT

<213> Homo sapiens

<400> 16

Arg Val Gln Lys Gln Lys His Leu Pro Leu Arg Val Ser Thr Arg Arg  
1 5 10 15

Arg Gly Ser Leu Glu Glu Asn Leu Phe His Glu Met Glu Thr Cys Leu  
20 25 30

Lys Arg Glu Asp Pro His Gly Thr Arg Thr Ser Asp Asp Thr Pro Asn  
35 40 45

His Gly Cys Glu Asp Ala Ser Asp Thr Ser Leu Leu Gly Val Leu Pro  
50 55 60

Ala Ser Glu Ala Thr Lys  
65 70

<210> 17

<211> 3104

<212> DNA

<213> Homo sapiens

<400> 17

gtcgaccac gcgtccggtc tgtggctgag catggccctc ccagccctgg gcctggaccc 60

```

ctggagcctc ctgggccttt tcctcttcca actgcttcag ctgctgctgc cgacgacgac 120
cgcgggggga ggcgggcagg ggcccatgcc cagggtcaga tactatgcag gggatgaacg 180
tagggcactt agcttcttcc accagaaggg cctccaggat tttgacactc tgctcctgag 240
tggtgatgga aatactctct acgtgggggc tcgagaagcc attctggcct tggatatcca 300
ggatccaggg gtccccaggc taaagaacat gataccgtgg ccagccagtg acagaaaaaa 360
gagtgaatgt gcctttaaga agaagagcaa tgagacacag tgtttcaact tcatccgtgt 420
cctggtttct tacaatgtca cccatctcta cacctgcggc accttcgcct tcagccctgc 480
ttgtaccttc attgaacttc aagattccta cctgttgccc atctcggagg acaaggtcac 540
ggagggaaaa ggccaaagcc ctttgacc cgtcacaaag catacggctg tcttggtgga 600
tggtgatgctc tattctggta ctatgaacaa cttcctgggc agtgagccca tcctgatgag 660
cacactggga tcccagcctg tcctcaagac cgacaacttc ctccgctggc tgcacatga 720
cgctcctttt gtggcagcca tcccttcgac ccaggctcgtc tacttcttct tcgaggagac 780
agccagcgag tttgacttct ttgagaggct ccacacatcg cgggtggcta gactctgcaa 840
gaatgacgtg ggcggcgaaa agctgctgca gaagaagtgg accaccttcc tgaaggccca 900
gctgctctgc acccagccgg ggcagctgcc cttcaacgtc atccgccacg cggctcctgct 960
ccccgccgat tctccacag ctccccacat ctacgcagtc ttcacctccc agtggcaggt 1020
tggcgggacc aggagctctg cggtttgtgc cttctctctc ttggacattg aacgtgtctt 1080
taaggggaaa taaaagagt tgaacaaaga aacttcacgc tggactactt ataggggccc 1140
tgagaccaac cccgggccag gcagttgtc agtgggcccc tcctctgata aggccctgac 1200
cttcatgaag gaccatttcc tgatggatga gcaagtgggt gggacgcccc tgctggtgaa 1260
atctggcgtg gagtatacac ggcttgacgt ggagacagcc cagggccttg atgggcacag 1320
ccatcttgct atgtacctgg gaaccaccac agggctcgtc cacaaggctg tggtaagtgg 1380
ggacagcagt gctcatctgg tggaagagat tcagctgttc cctgaccctg aacctgttcg 1440
caacctgcag ctggcccca cccagggtgc agtgtttcta ggcttctcag gaggtgtctg 1500
gagggtgccc cgagccaact gtagtgtcta tgagagctgt gtggactgtg tccttgcccg 1560
ggacccccac tgtgcctggg accctgagtc ccgaacctgt tgctcctgt ctgccccaa 1620
cctgaactcc tggaagcagg acatggagcg ggggaacca gagtgggcat gtgccagtgg 1680
ccccatgagc aggagccttc ggctcagag ccgccgcaa atcattaaag aagtcctggc 1740
tgtcccaac tccatcctgg agtccccctg cccccacctg tcagccttgg cctcttatta 1800
ttggagtcac ggcccagcag cagtcccaga agcctcttcc actgtctaca atggctccct 1860
cttgctgata gtgcaggatg gagttggggg tctctaccag tgctgggcaa ctgagaatgg 1920
cttttcatac cctgtgatct cctactgggt ggacagccag gaccagaccc tggccctgga 1980
tcctgaactg gcaggcatcc cccgggagca tgtgaaggct ccgttgacca gggtcagtgg 2040
tggggcccgc ctggctgccc agcagtccta ctggccccac tttgtcactg tcactgtcct 2100
ctttgcctta gtgctttcag gagccctcat catcctcgtg gcctccccat tgagagcact 2160
ccgggctcgg ggcaagggtc agggctgtga gaccctgcgc cctggggaga agggcccgtt 2220
aagcagagag caacacctcc agtctcccaa ggaatgcagg acctctgcca gtgatgtgga 2280
cgctgacaac aactgcctag gcactgaggt agcttaaact ctaggcacag gccggggctg 2340
cgggtcaggg acctggccat gctggctggg cggcccaagc acagccctga ctaggatgac 2400
agcagcacia aagaccacct ttctccccct agaggagctt ctgctactct gcatcactga 2460
tgacactcag cagggtgatg cacagcagtc tgcctcccct atgggactcc cttctaccaa 2520
gcacatgagc tctctaacag ggtgggggct acccccagac ctgctcctac actgatattg 2580
aagaacctgg agaggatcct tcagttctgg ccattccagg gaccctccag aaacacagtg 2640
tttcaagaga tcctaaaaaa acctgcctgt cccaggaccc tatggtaatg aacaccaaac 2700
atctaaacaa tcatatgcta acatgccact cctggaaact ccactctgaa gctgccgctt 2760
tggaacacaa cactcccttc tcccagggtc atgcagggat ctgctccctc ctgcttccct 2820
taccagtcgt gcaccgctga ctcccaggaa gtctttcctg aagtctgacc acctttcttc 2880
ttgcttcagt tggggcagac tctgatccct tctgccctgg cagaatggca ggggtaactt 2940

```

gagccttctt	cactccttta	ccctagctga	ccccttcacc	tctccccctc	ccttttctct	3000
tgttttggga	ttcagaaaaac	tgcttgctcag	agactgttta	ttttttatta	aaaatataag	3060
gcttaaaaaa	aaaaaaaaaa	aaaaaaaaaa	aaaagggcgg	ccgc		3104

<210> 18

<211> 2283

<212> DNA

<213> Homo sapiens

<400> 18

atggccctcc	cagccctggg	cctggacccc	tggagcctcc	tgggcctttt	cctcttccaa	60
ctgcttcagc	tgctgctgcc	gacgacgacc	gcggggggag	gcgggcaggg	gccccatgcc	120
agggtcagat	actatgcagg	ggatgaacgt	agggcactta	gcttcttcca	ccagaagggc	180
ctccaggatt	ttgacactct	gctcctgagt	ggtgatggaa	atactctcta	cgtgggggct	240
cgagaagcca	ttctggcctt	ggatatccag	gatccagggg	tccccaggct	aaagaacatg	300
ataccgtggc	cagccagtga	cagaaaaaag	agtgaatgtg	cctttaagaa	gaagagcaat	360
gagacacagt	gtttcaactt	catccgtgtc	ctggtttctt	acaatgtcac	ccatctctac	420
acctgcggca	ccttcgcctt	cagccctgct	tgtaccttca	ttgaacttca	agattcctac	480
ctgttgccca	tctcggagga	caaggtcagt	gagggaaaag	gccaaagccc	ctttgacccc	540
gctcacaagc	atacggctgt	cttggtggat	gggatgctct	attctggtac	tatgaacaac	600
ttcctgggca	gtgagcccat	cctgatgcgc	acactgggat	cccagcctgt	cctcaagacc	660
gacaacttcc	tccgctggct	gcatcatgac	gcctcctttg	tggcagccat	cccttcgacc	720
caggctgtct	acttcttctt	cgaggagaca	gccagcgagt	ttgacttctt	tgagaggctc	780
cacacatcgc	gggtggctag	agtctgcaag	aatgacgtgg	gcggcgaaaa	gctgctgcag	840
aagaagtgga	ccaccttcct	gaaggccag	ctgctctgca	cccagccggg	gcagctgccc	900
ttcaacgtca	tccgccacgc	ggtcctgtct	cccgccgatt	ctcccacagc	tccccacatc	960
tacgcagtct	tcacctccca	gtggcagggt	ggcgggacca	ggagctctgc	ggtttgtgcc	1020
ttctctctct	tggacattga	acgtgtcttt	aaggggaaat	acaaagagtt	gaacaaagaa	1080
acttcacgct	ggactactta	tagggggcct	gagaccaacc	cccggccagg	cagttgctca	1140
gtggggccct	cctctgataa	ggccctgacc	ttcatgaagg	accatttcct	gatggatgag	1200
caagtgggtg	ggacgcccct	gctggtgaaa	tctggcgtgg	agtatacacg	gcttgacgtg	1260
gagacagccc	agggccttga	tgggcacagc	catcttgtca	tgtacctggg	aaccaccaca	1320
gggtcgcctc	acaaggctgt	ggtaagtggg	gacagcagtg	ctcatctggt	ggaagagatt	1380
cagctgttcc	ctgaccctga	acctgttcgc	aacctgcagc	tggcccccac	ccagggtgca	1440
gtgtttgtag	gcttctcagg	aggtgtctgg	aggggtgccc	gagccaactg	tagtgtctat	1500
gagagctgtg	tggactgtgt	ccttgcccgg	gacccccact	gtgcctggga	ccctgagtcc	1560
cgaacctgtt	gcctcctgtc	tgcccccaac	ctgaactcct	ggaagcagga	catggagcgg	1620
gggaaccagg	agtgggcatg	tgccagtggc	cccatgagca	ggagccttcg	gcctcagagc	1680
cgcccgcaaa	tcattaaaga	agtcctggct	gtccccaaact	ccatcctgga	gctccccctgc	1740
ccccacctgt	cagccttggc	ctcttattat	tggagtcagt	gcccagcagc	agtcccagaa	1800
gcctcttcca	ctgtctacaa	tggctccctc	ttgctgatag	tgcaggatgg	agttgggggt	1860
ctctaccagt	gctgggcaac	tgagaatggc	ttttcatacc	ctgtgatctc	ctactgggtg	1920
gacagccagg	accagaccct	ggccctggat	cctgaactgg	caggcatccc	ccgggagcat	1980
gtgaaggctc	cgttgaccag	ggtcagtggg	ggggccgccc	tggctgcccc	gcagtcctac	2040
tggccccact	ttgtcactgt	cactgtcctc	tttgccttag	tgctttcagg	agccctcatc	2100
atcctcgtgg	cctccccatt	gagagcactc	cgggctcggg	gcaagggtca	gggctgtgag	2160
accctgcgcc	ctggggagaa	ggccccgtta	agcagagagc	aacacctcca	gtctcccaag	2220



gaatgcagga cctctgccag tgatgtggac gctgacaaca actgcctagg cactgaggtg 2280  
gct 2283

<210> 19  
<211> 761  
<212> PRT  
<213> Homo sapiens

<400> 19

Met	Ala	Leu	Pro	Ala	Leu	Gly	Leu	Asp	Pro	Trp	Ser	Leu	Leu	Gly	Leu
1				5					10					15	
Phe	Leu	Phe	Gln	Leu	Leu	Gln	Leu	Leu	Leu	Pro	Thr	Thr	Thr	Ala	Gly
			20					25						30	
Gly	Gly	Gly	Gln	Gly	Pro	Met	Pro	Arg	Val	Arg	Tyr	Tyr	Ala	Gly	Asp
			35					40					45		
Glu	Arg	Arg	Ala	Leu	Ser	Phe	Phe	His	Gln	Lys	Gly	Leu	Gln	Asp	Phe
	50					55					60				
Asp	Thr	Leu	Leu	Leu	Ser	Gly	Asp	Gly	Asn	Thr	Leu	Tyr	Val	Gly	Ala
65					70					75					80
Arg	Glu	Ala	Ile	Leu	Ala	Leu	Asp	Ile	Gln	Asp	Pro	Gly	Val	Pro	Arg
				85					90					95	
Leu	Lys	Asn	Met	Ile	Pro	Trp	Pro	Ala	Ser	Asp	Arg	Lys	Lys	Ser	Glu
			100					105					110		
Cys	Ala	Phe	Lys	Lys	Lys	Ser	Asn	Glu	Thr	Gln	Cys	Phe	Asn	Phe	Ile
		115					120					125			
Arg	Val	Leu	Val	Ser	Tyr	Asn	Val	Thr	His	Leu	Tyr	Thr	Cys	Gly	Thr
	130					135					140				
Phe	Ala	Phe	Ser	Pro	Ala	Cys	Thr	Phe	Ile	Glu	Leu	Gln	Asp	Ser	Tyr
145					150					155					160
Leu	Leu	Pro	Ile	Ser	Glu	Asp	Lys	Val	Met	Glu	Gly	Lys	Gly	Gln	Ser
				165					170					175	
Pro	Phe	Asp	Pro	Ala	His	Lys	His	Thr	Ala	Val	Leu	Val	Asp	Gly	Met
			180					185						190	
Leu	Tyr	Ser	Gly	Thr	Met	Asn	Asn	Phe	Leu	Gly	Ser	Glu	Pro	Ile	Leu
		195					200					205			

09578063-052400

Met Arg Thr Leu Gly Ser Gln Pro Val Leu Lys Thr Asp Asn Phe Leu  
 210 215 220  
 Arg Trp Leu His His Asp Ala Ser Phe Val Ala Ala Ile Pro Ser Thr  
 225 230 235 240  
 Gln Val Val Tyr Phe Phe Phe Glu Glu Thr Ala Ser Glu Phe Asp Phe  
 245 250 255  
 Phe Glu Arg Leu His Thr Ser Arg Val Ala Arg Val Cys Lys Asn Asp  
 260 265 270  
 Val Gly Gly Glu Lys Leu Leu Gln Lys Lys Trp Thr Thr Phe Leu Lys  
 275 280 285  
 Ala Gln Leu Leu Cys Thr Gln Pro Gly Gln Leu Pro Phe Asn Val Ile  
 290 295 300  
 Arg His Ala Val Leu Leu Pro Ala Asp Ser Pro Thr Ala Pro His Ile  
 305 310 315 320  
 Tyr Ala Val Phe Thr Ser Gln Trp Gln Val Gly Gly Thr Arg Ser Ser  
 325 330 335  
 Ala Val Cys Ala Phe Ser Leu Leu Asp Ile Glu Arg Val Phe Lys Gly  
 340 345 350  
 Lys Tyr Lys Glu Leu Asn Lys Glu Thr Ser Arg Trp Thr Thr Tyr Arg  
 355 360 365  
 Gly Pro Glu Thr Asn Pro Arg Pro Gly Ser Cys Ser Val Gly Pro Ser  
 370 375 380  
 Ser Asp Lys Ala Leu Thr Phe Met Lys Asp His Phe Leu Met Asp Glu  
 385 390 395 400  
 Gln Val Val Gly Thr Pro Leu Leu Val Lys Ser Gly Val Glu Tyr Thr  
 405 410 415  
 Arg Leu Ala Val Glu Thr Ala Gln Gly Leu Asp Gly His Ser His Leu  
 420 425 430  
 Val Met Tyr Leu Gly Thr Thr Thr Gly Ser Leu His Lys Ala Val Val  
 435 440 445  
 Ser Gly Asp Ser Ser Ala His Leu Val Glu Glu Ile Gln Leu Phe Pro  
 450 455 460



Thr Leu Arg Pro Gly Glu Lys Ala Pro Leu Ser Arg Glu Gln His Leu  
725 730 735

Gln Ser Pro Lys Glu Cys Arg Thr Ser Ala Ser Asp Val Asp Ala Asp  
740 745 750

Asn Asn Cys Leu Gly Thr Glu Val Ala  
755 760

<210> 20

<211> 31

<212> PRT

<213> Homo sapiens

<400> 20

Met Ala Leu Pro Ala Leu Gly Leu Asp Pro Trp Ser Leu Leu Gly Leu  
1 5 10 15

Phe Leu Phe Gln Leu Leu Gln Leu Leu Leu Pro Thr Thr Thr Ala  
20 25 30

<210> 21

<211> 730

<212> PRT

<213> Homo sapiens

<400> 21

Gly Gly Gly Gly Gln Gly Pro Met Pro Arg Val Arg Tyr Tyr Ala Gly  
1 5 10 15

Asp Glu Arg Arg Ala Leu Ser Phe Phe His Gln Lys Gly Leu Gln Asp  
20 25 30

Phe Asp Thr Leu Leu Leu Ser Gly Asp Gly Asn Thr Leu Tyr Val Gly  
35 40 45

Ala Arg Glu Ala Ile Leu Ala Leu Asp Ile Gln Asp Pro Gly Val Pro  
50 55 60

Arg Leu Lys Asn Met Ile Pro Trp Pro Ala Ser Asp Arg Lys Lys Ser  
65 70 75 80

Glu Cys Ala Phe Lys Lys Lys Ser Asn Glu Thr Gln Cys Phe Asn Phe  
85 90 95

Ile Arg Val Leu Val Ser Tyr Asn Val Thr His Leu Tyr Thr Cys Gly  
 100 105 110  
 Thr Phe Ala Phe Ser Pro Ala Cys Thr Phe Ile Glu Leu Gln Asp Ser  
 115 120 125  
 Tyr Leu Leu Pro Ile Ser Glu Asp Lys Val Met Glu Gly Lys Gly Gln  
 130 135 140  
 Ser Pro Phe Asp Pro Ala His Lys His Thr Ala Val Leu Val Asp Gly  
 145 150 155 160  
 Met Leu Tyr Ser Gly Thr Met Asn Asn Phe Leu Gly Ser Glu Pro Ile  
 165 170 175  
 Leu Met Arg Thr Leu Gly Ser Gln Pro Val Leu Lys Thr Asp Asn Phe  
 180 185 190  
 Leu Arg Trp Leu His His Asp Ala Ser Phe Val Ala Ala Ile Pro Ser  
 195 200 205  
 Thr Gln Val Val Tyr Phe Phe Phe Glu Glu Thr Ala Ser Glu Phe Asp  
 210 215 220  
 Phe Phe Glu Arg Leu His Thr Ser Arg Val Ala Arg Val Cys Lys Asn  
 225 230 235 240  
 Asp Val Gly Gly Glu Lys Leu Leu Gln Lys Lys Trp Thr Thr Phe Leu  
 245 250 255  
 Lys Ala Gln Leu Leu Cys Thr Gln Pro Gly Gln Leu Pro Phe Asn Val  
 260 265 270  
 Ile Arg His Ala Val Leu Leu Pro Ala Asp Ser Pro Thr Ala Pro His  
 275 280 285  
 Ile Tyr Ala Val Phe Thr Ser Gln Trp Gln Val Gly Gly Thr Arg Ser  
 290 295 300  
 Ser Ala Val Cys Ala Phe Ser Leu Leu Asp Ile Glu Arg Val Phe Lys  
 305 310 315 320  
 Gly Lys Tyr Lys Glu Leu Asn Lys Glu Thr Ser Arg Trp Thr Thr Tyr  
 325 330 335  
 Arg Gly Pro Glu Thr Asn Pro Arg Pro Gly Ser Cys Ser Val Gly Pro  
 340 345 350

Ser Ser Asp Lys Ala Leu Thr Phe Met Lys Asp His Phe Leu Met Asp  
 355 360 365  
 Glu Gln Val Val Gly Thr Pro Leu Leu Val Lys Ser Gly Val Glu Tyr  
 370 375 380  
 Thr Arg Leu Ala Val Glu Thr Ala Gln Gly Leu Asp Gly His Ser His  
 385 390 395 400  
 Leu Val Met Tyr Leu Gly Thr Thr Thr Gly Ser Leu His Lys Ala Val  
 405 410 415  
 Val Ser Gly Asp Ser Ser Ala His Leu Val Glu Glu Ile Gln Leu Phe  
 420 425 430  
 Pro Asp Pro Glu Pro Val Arg Asn Leu Gln Leu Ala Pro Thr Gln Gly  
 435 440 445  
 Ala Val Phe Val Gly Phe Ser Gly Gly Val Trp Arg Val Pro Arg Ala  
 450 455 460  
 Asn Cys Ser Val Tyr Glu Ser Cys Val Asp Cys Val Leu Ala Arg Asp  
 465 470 475 480  
 Pro His Cys Ala Trp Asp Pro Glu Ser Arg Thr Cys Cys Leu Leu Ser  
 485 490 495  
 Ala Pro Asn Leu Asn Ser Trp Lys Gln Asp Met Glu Arg Gly Asn Pro  
 500 505 510  
 Glu Trp Ala Cys Ala Ser Gly Pro Met Ser Arg Ser Leu Arg Pro Gln  
 515 520 525  
 Ser Arg Pro Gln Ile Ile Lys Glu Val Leu Ala Val Pro Asn Ser Ile  
 530 535 540  
 Leu Glu Leu Pro Cys Pro His Leu Ser Ala Leu Ala Ser Tyr Tyr Trp  
 545 550 555 560  
 Ser His Gly Pro Ala Ala Val Pro Glu Ala Ser Ser Thr Val Tyr Asn  
 565 570 575  
 Gly Ser Leu Leu Leu Ile Val Gln Asp Gly Val Gly Gly Leu Tyr Gln  
 580 585 590  
 Cys Trp Ala Thr Glu Asn Gly Phe Ser Tyr Pro Val Ile Ser Tyr Trp  
 595 600 605

Val Asp Ser Gln Asp Gln Thr Leu Ala Leu Asp Pro Glu Leu Ala Gly  
610 615 620

Ile Pro Arg Glu His Val Lys Val Pro Leu Thr Arg Val Ser Gly Gly  
625 630 635 640

Ala Ala Leu Ala Ala Gln Gln Ser Tyr Trp Pro His Phe Val Thr Val  
645 650 655

Thr Val Leu Phe Ala Leu Val Leu Ser Gly Ala Leu Ile Ile Leu Val  
660 665 670

Ala Ser Pro Leu Arg Ala Leu Arg Ala Arg Gly Lys Val Gln Gly Cys  
675 680 685

Glu Thr Leu Arg Pro Gly Glu Lys Ala Pro Leu Ser Arg Glu Gln His  
690 695 700

Leu Gln Ser Pro Lys Glu Cys Arg Thr Ser Ala Ser Asp Val Asp Ala  
705 710 715 720

Asp Asn Asn Cys Leu Gly Thr Glu Val Ala  
725 730

<210> 22

<211> 652

<212> PRT

<213> Homo sapiens

<400> 22

Gly Gly Gly Gly Gln Gly Pro Met Pro Arg Val Arg Tyr Tyr Ala Gly  
1 5 10 15

Asp Glu Arg Arg Ala Leu Ser Phe Phe His Gln Lys Gly Leu Gln Asp  
20 25 30

Phe Asp Thr Leu Leu Leu Ser Gly Asp Gly Asn Thr Leu Tyr Val Gly  
35 40 45

Ala Arg Glu Ala Ile Leu Ala Leu Asp Ile Gln Asp Pro Gly Val Pro  
50 55 60

Arg Leu Lys Asn Met Ile Pro Trp Pro Ala Ser Asp Arg Lys Lys Ser  
65 70 75 80

Glu Cys Ala Phe Lys Lys Lys Ser Asn Glu Thr Gln Cys Phe Asn Phe  
85 90 95

Ile Arg Val Leu Val Ser Tyr Asn Val Thr His Leu Tyr Thr Cys Gly  
 100 105 110  
 Thr Phe Ala Phe Ser Pro Ala Cys Thr Phe Ile Glu Leu Gln Asp Ser  
 115 120 125  
 Tyr Leu Leu Pro Ile Ser Glu Asp Lys Val Met Glu Gly Lys Gly Gln  
 130 135 140  
 Ser Pro Phe Asp Pro Ala His Lys His Thr Ala Val Leu Val Asp Gly  
 145 150 155 160  
 Met Leu Tyr Ser Gly Thr Met Asn Asn Phe Leu Gly Ser Glu Pro Ile  
 165 170 175  
 Leu Met Arg Thr Leu Gly Ser Gln Pro Val Leu Lys Thr Asp Asn Phe  
 180 185 190  
 Leu Arg Trp Leu His His Asp Ala Ser Phe Val Ala Ala Ile Pro Ser  
 195 200 205  
 Thr Gln Val Val Tyr Phe Phe Phe Glu Glu Thr Ala Ser Glu Phe Asp  
 210 215 220  
 Phe Phe Glu Arg Leu His Thr Ser Arg Val Ala Arg Val Cys Lys Asn  
 225 230 235 240  
 Asp Val Gly Gly Glu Lys Leu Leu Gln Lys Lys Trp Thr Thr Phe Leu  
 245 250 255  
 Lys Ala Gln Leu Leu Cys Thr Gln Pro Gly Gln Leu Pro Phe Asn Val  
 260 265 270  
 Ile Arg His Ala Val Leu Leu Pro Ala Asp Ser Pro Thr Ala Pro His  
 275 280 285  
 Ile Tyr Ala Val Phe Thr Ser Gln Trp Gln Val Gly Gly Thr Arg Ser  
 290 295 300  
 Ser Ala Val Cys Ala Phe Ser Leu Leu Asp Ile Glu Arg Val Phe Lys  
 305 310 315 320  
 Gly Lys Tyr Lys Glu Leu Asn Lys Glu Thr Ser Arg Trp Thr Thr Tyr  
 325 330 335  
 Arg Gly Pro Glu Thr Asn Pro Arg Pro Gly Ser Cys Ser Val Gly Pro  
 340 345 350



Ser Ser Asp Lys Ala Leu Thr Phe Met Lys Asp His Phe Leu Met Asp  
 355 360 365  
 Glu Gln Val Val Gly Thr Pro Leu Leu Val Lys Ser Gly Val Glu Tyr  
 370 375 380  
 Thr Arg Leu Ala Val Glu Thr Ala Gln Gly Leu Asp Gly His Ser His  
 385 390 395 400  
 Leu Val Met Tyr Leu Gly Thr Thr Thr Gly Ser Leu His Lys Ala Val  
 405 410 415  
 Val Ser Gly Asp Ser Ser Ala His Leu Val Glu Glu Ile Gln Leu Phe  
 420 425 430  
 Pro Asp Pro Glu Pro Val Arg Asn Leu Gln Leu Ala Pro Thr Gln Gly  
 435 440 445  
 Ala Val Phe Val Gly Phe Ser Gly Gly Val Trp Arg Val Pro Arg Ala  
 450 455 460  
 Asn Cys Ser Val Tyr Glu Ser Cys Val Asp Cys Val Leu Ala Arg Asp  
 465 470 475 480  
 Pro His Cys Ala Trp Asp Pro Glu Ser Arg Thr Cys Cys Leu Leu Ser  
 485 490 495  
 Ala Pro Asn Leu Asn Ser Trp Lys Gln Asp Met Glu Arg Gly Asn Pro  
 500 505 510  
 Glu Trp Ala Cys Ala Ser Gly Pro Met Ser Arg Ser Leu Arg Pro Gln  
 515 520 525  
 Ser Arg Pro Gln Ile Ile Lys Glu Val Leu Ala Val Pro Asn Ser Ile  
 530 535 540  
 Leu Glu Leu Pro Cys Pro His Leu Ser Ala Leu Ala Ser Tyr Tyr Trp  
 545 550 555 560  
 Ser His Gly Pro Ala Ala Val Pro Glu Ala Ser Ser Thr Val Tyr Asn  
 565 570 575  
 Gly Ser Leu Leu Leu Ile Val Gln Asp Gly Val Gly Gly Leu Tyr Gln  
 580 585 590  
 Cys Trp Ala Thr Glu Asn Gly Phe Ser Tyr Pro Val Ile Ser Tyr Trp  
 595 600 605

00578063.052400

Val Asp Ser Gln Asp Gln Thr Leu Ala Leu Asp Pro Glu Leu Ala Gly  
 610 615 620

Ile Pro Arg Glu His Val Lys Val Pro Leu Thr Arg Val Ser Gly Gly  
 625 630 635 640

Ala Ala Leu Ala Ala Gln Gln Ser Tyr Trp Pro His  
 645 650

<210> 23

<211> 21

<212> PRT

<213> Homo sapiens

<400> 23

Phe Val Thr Val Thr Val Leu Phe Ala Leu Val Leu Ser Gly Ala Leu  
 1 5 10 15

Ile Ile Leu Val Ala  
 20

<210> 24

<211> 57

<212> PRT

<213> Homo sapiens

<400> 24

Ser Pro Leu Arg Ala Leu Arg Ala Arg Gly Lys Val Gln Gly Cys Glu  
 1 5 10 15

Thr Leu Arg Pro Gly Glu Lys Ala Pro Leu Ser Arg Glu Gln His Leu  
 20 25 30

Gln Ser Pro Lys Glu Cys Arg Thr Ser Ala Ser Asp Val Asp Ala Asp  
 35 40 45

Asn Asn Cys Leu Gly Thr Glu Val Ala  
 50 55

<210> 25

<211> 2964

<212> DNA

<213> Homo sapiens

&lt;400&gt; 25

```

gtcgaccac gcgccgcg gacgcgtggg acggctccc gctgcagtct gcccggccgc 60
cccgcgcg ggcgcgagtc cgaagcgcgc ctgcgacccg gcgccgggc gcgctggaga 120
ggacgcgagg agccatgagg cgccagcctg cgaagggtggc ggcgctgctg ctccgggctgc 180
tcttgaggatg cacagaagcc aaaaagcatt gctgggtattt cgaaggactc tatccaacct 240
attatatatg ccgctcctac gaggactgct gtggctccag gtgctgtgtg cggggccctct 300
ccatacagag gctgtggtac ttctggttcc ttctgatgat gggcgctgctt ttctgctgcg 360
gagccgggctt cttcatccgg aggcgcgtgt acccccgcgc gctgatcgag gagccagcct 420
tcaatgtgtc ctacaccagg cagcccccaa atcccggccc aggagcccag cagccggggc 480
cgccctatta cactgaccca ggaggaccgg ggatgaaccc tgtcgggaat tccatggcaa 540
tggttttcca ggtcccaccc aactcacccc aggggagtggt ggctgcccg cccctccag 600
cctactgcaa cagcctccg ccccgtagc aacaggtagt gaaggccaag tagtggggtg 660
cccacgtgca agaggagaga caggagaggg cctttccctg gcctttctgt cttcgttgat 720
gttcacttcc aggaacggtc tcgtgggctg ctaagggcag ttcctctgat atcctcacag 780
caagcacagc tctctttcag gctttccatg gactacaata tatgaactca cactttgtct 840
cctctgttgc ttctgtttct gacgcagtct gtgctctcac atggtagtgt ggtgacagtc 900
cccgagggct gacgtcctta cgggtggcgtg accagatcta caggagagag actgagagga 960
agaaggcagt gctggagggtg cagggtggcat gtagaggggc caggccgagc atcccaggca 1020
agcatccttc tgcccgggta ttaataggaa gcccagtcg ggcgggctca gccgatgaag 1080
cagcagccga ctgagctgag ccagcaggt catctgctcc agcctgtcct ctgctcagcc 1140
ttcctcttcc agaagctgtt ggagagacat tcaggagaga gcaagcccct tgtcatgttt 1200
ctgtctctgt tcatatccta aagatagact tctcctgcac cgccaggga gggtagcacg 1260
tgagctctc accgcaggat ggggcctaga atcaggcttg ccttgagggc ctgacagtga 1320
tctgacatcc actaagcaaa tttatttaaa ttcatgggaa atcacttctt gcccctaaact 1380
gagacattgc attttgtgag ctcttggtct gatttgagga aaggactgtt acccattttt 1440
ttggtgtgtt tatggaagtg catgtagagc gtcctgccct ttgaaatcag actgggtgtg 1500
tgtcttcctt ggacatcact gcctctccag ggcatctca ggcgggggg tctccttccc 1560
tcaggcagct ccagtgggtg gttctgaagg gtgctttcaa aacggggcac atctggctgg 1620
gaagtcacat ggactcttcc agggagagag accagctgag gcgtctctct ctgaggttgt 1680
gttgggtcta agcgggtgtg tgctgggctc caaggaggag gagcttgctg ggaaaagaca 1740
ggagaagtac tgactcaact gcactgacca tggtgtcata attagaataa agaagaagtg 1800
gtcggaaaatg cacattcctg gataggaatc acagctcacc ccaggatctc acaggtagtc 1860
tctgagtag ttgacggcta gcggggagct agttccgccg catagttata gtgttgatgt 1920
gtgaacgctg acctgtcctg tgtgctaaga gctatgcagc ttagctgagg cgcctagatt 1980
actagatgtg ctgtatcacg gggaaatgagg tgggggtgct ttttttttaa tgaactaatc 2040
agagcctctt gagaaattgt tactcattga actggagcat caagacatct catggaagtg 2100
gatacggagt gatttggtgt ccatgctttt cactctgagg acatttaatc ggagaacctc 2160
ctgggggaatt ttgtgggaga cacttgggaa caaacagac accctgggaa tgcagttgca 2220
agcacagatg ctgccaccag tgtctctgac caccctggtg tgactgctga ctgccagcgt 2280
ggtacctccc atgctgcagg cctccatcta aatgagacaa caaagcacia tggttactgt 2340
ttacaaccaa gacaactgcg tgggtccaaa cactcctctt cctccaggtc atttgttttg 2400
cattttttaat gtcttttattt tttgtaatga aaaagcacac taagctgccc ctggaatcgg 2460
gtgcagctga ataggcacc aaagtccgt gactaaattt cgtttgtctt tttgatagca 2520
aattatgtta agagacagtg atggctaggg ctcaacaatt ttgtattccc atgttttgtt 2580
gagacagagt ttgttttccc ttgaacttgg ttgaattgt gctactgtga acgctgatcc 2640
tgcatatgga agtcccactt tggtagacatt tctggccat tcttggttcc attgtgtgga 2700
tggtgggttg tgcccacttc ctggagtgag acagctcctg gtgtgtagaa ttcccgagc 2760
gtccgtggtt cagagtaaac ttgaagcaga tctgtgcatg cttttcctct gcaacaattg 2820

```

gctcgtttct cttttttgtt ctcttttgat aggatcctgt ttcctatgtg tgcaaaataa 2880  
 aaataaattt gggcaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 2940  
 aaaaaaaaaa aaaagggcgg ccgc 2964

<210> 26  
 <211> 516  
 <212> DNA  
 <213> Homo sapiens

<400> 26  
 atgaggcgcc agcctgcgaa ggtggcggcg ctgctgctcg ggctgctctt ggagtgcaca 60  
 gaagccaaaa agcattgctg gtatttcgaa ggactctatc caacctatta tatatgccgc 120  
 tcctacgagg actgctgtgg ctccagggtgc tgtgtgcggg ccctctccat acagaggctg 180  
 tggtaacttct ggttccttct gatgatgggc gtgcttttct gctgcggagc cggcttcttc 240  
 atccggaggc gcatgtaccc cccgccgctg atcgaggagc cagccttcaa tgtgtcctac 300  
 accaggcagc ccccaaatcc cggcccagga gccagcagc cggggccgcc ctattacact 360  
 gaccagagag gaccggggat gaaccctgtc ggaattcca tggcaatggc tttccaggtc 420  
 ccaccaact caccaggg gagtgtggc tgccgcccc ctccagccta ctgcaacacg 480  
 cctccgcccc cgtacgaaca ggtagtgaag gccaag 516

<210> 27  
 <211> 172  
 <212> PRT  
 <213> Homo sapiens

<400> 27  
 Met Arg Arg Gln Pro Ala Lys Val Ala Ala Leu Leu Leu Gly Leu Leu  
 1 5 10 15  
 Leu Glu Cys Thr Glu Ala Lys Lys His Cys Trp Tyr Phe Glu Gly Leu  
 20 25 30  
 Tyr Pro Thr Tyr Tyr Ile Cys Arg Ser Tyr Glu Asp Cys Cys Gly Ser  
 35 40 45  
 Arg Cys Cys Val Arg Ala Leu Ser Ile Gln Arg Leu Trp Tyr Phe Trp  
 50 55 60  
 Phe Leu Leu Met Met Gly Val Leu Phe Cys Cys Gly Ala Gly Phe Phe  
 65 70 75 80  
 Ile Arg Arg Arg Met Tyr Pro Pro Pro Leu Ile Glu Glu Pro Ala Phe  
 85 90 95  
 Asn Val Ser Tyr Thr Arg Gln Pro Pro Asn Pro Gly Pro Gly Ala Gln  
 100 105 110

Gln Pro Gly Pro Pro Tyr Tyr Thr Asp Pro Gly Gly Pro Gly Met Asn  
 115 120 125

Pro Val Gly Asn Ser Met Ala Met Ala Phe Gln Val Pro Pro Asn Ser  
 130 135 140

Pro Gln Gly Ser Val Ala Cys Pro Pro Pro Pro Ala Tyr Cys Asn Thr  
 145 150 155 160

Pro Pro Pro Pro Tyr Glu Gln Val Val Lys Ala Lys  
 165 170

<210> 28

<211> 22

<212> PRT

<213> Homo sapiens

<400> 28

Met Arg Arg Gln Pro Ala Lys Val Ala Ala Leu Leu Leu Gly Leu Leu  
 1 5 10 15

Leu Glu Cys Thr Glu Ala  
 20

<210> 29

<211> 150

<212> PRT

<213> Homo sapiens

<400> 29

Lys Lys His Cys Trp Tyr Phe Glu Gly Leu Tyr Pro Thr Tyr Tyr Ile  
 1 5 10 15

Cys Arg Ser Tyr Glu Asp Cys Cys Gly Ser Arg Cys Cys Val Arg Ala  
 20 25 30

Leu Ser Ile Gln Arg Leu Trp Tyr Phe Trp Phe Leu Leu Met Met Gly  
 35 40 45

Val Leu Phe Cys Cys Gly Ala Gly Phe Phe Ile Arg Arg Arg Met Tyr  
 50 55 60

Pro Pro Pro Leu Ile Glu Glu Pro Ala Phe Asn Val Ser Tyr Thr Arg  
 65 70 75 80

Gln Pro Pro Asn Pro Gly Pro Gly Ala Gln Gln Pro Gly Pro Pro Tyr  
85 90 95

Tyr Thr Asp Pro Gly Gly Pro Gly Met Asn Pro Val Gly Asn Ser Met  
100 105 110

Ala Met Ala Phe Gln Val Pro Pro Asn Ser Pro Gln Gly Ser Val Ala  
115 120 125

Cys Pro Pro Pro Pro Ala Tyr Cys Asn Thr Pro Pro Pro Pro Tyr Glu  
130 135 140

Gln Val Val Lys Ala Lys  
145 150

<210> 30

<211> 38

<212> PRT

<213> Homo sapiens

<400> 30

Lys Lys His Cys Trp Tyr Phe Glu Gly Leu Tyr Pro Thr Tyr Tyr Ile  
1 5 10 15

Cys Arg Ser Tyr Glu Asp Cys Cys Gly Ser Arg Cys Cys Val Arg Ala  
20 25 30

Leu Ser Ile Gln Arg Leu  
35

<210> 31

<211> 21

<212> PRT

<213> Homo sapiens

<400> 31

Trp Tyr Phe Trp Phe Leu Leu Met Met Gly Val Leu Phe Cys Cys Gly  
1 5 10 15

Ala Gly Phe Phe Ile  
20

<210> 32

<211> 91

<212> PRT

<213> Homo sapiens

<400> 32

Arg Arg Arg Met Tyr Pro Pro Pro Leu Ile Glu Glu Pro Ala Phe Asn  
1 5 10 15

Val Ser Tyr Thr Arg Gln Pro Pro Asn Pro Gly Pro Gly Ala Gln Gln  
20 25 30

Pro Gly Pro Pro Tyr Tyr Thr Asp Pro Gly Gly Pro Gly Met Asn Pro  
35 40 45

Val Gly Asn Ser Met Ala Met Ala Phe Gln Val Pro Pro Asn Ser Pro  
50 55 60

Gln Gly Ser Val Ala Cys Pro Pro Pro Pro Ala Tyr Cys Asn Thr Pro  
65 70 75 80

Pro Pro Pro Tyr Glu Gln Val Val Lys Ala Lys  
85 90

<210> 33

<211> 1980

<212> DNA

<213> Homo sapiens

<400> 33

gtcgacccac gcgtccgcag ctttggacac ttcctctgct tgaggacacc ttgactaacc 60  
tccaagggca actaaaggat caagaaaggc ccagcacagc agaagatcag ctggatctag 120  
ctcctgcagg agatgtgtac aaagacaatc ccagtcctct ggggatgttt cctcctgtgg 180  
aatctctatg tctcatcctc tcagaccatt taccctggaa tcaaggcaag gattactcag 240  
agggcacttg actatggtgt tcaagctgga atgaagatga ttgagcaaat gctaaaagaa 300  
aagaaactcc cagatttaag cggttctgag tctcttgaat ttctaaaagt tgattatgta 360  
aactacaatt tttcaaatat aaaaatcagt gccttttcat ttccaaatac ctcatgggct 420  
tttgtgcctg gagtggaat caaagcgcta accaaccatg gcactgccaa catcagcaca 480  
gactgggggt tcgagtctcc actttttgtt ctgtataact cctttgctga gcccatggag 540  
aaaccatttt taaagaactt aaatgaaatg ctctgtccca ttattgcaag tgaagtcaaa 600  
gcgctaaatg ccaacctcag cacactggag gttttaacca agattgacaa ctacactctg 660  
ctggattact ccctaatacag ttctccagaa attactgaga actaccttga cctgaacttg 720  
aagggtgtat tctacccact ggaaaacctc accgaccccc ccttctcacc agttcctttt 780  
gtgctcccag aacgcagcaa ctccatgctc tacattggaa tcgccgagta tttctttaaa 840  
tctgcgtcct ttgctcattt cacagctggg gttttcaatc tcactctctc caccgaagag 900  
atttccaacc attttgttca aaactctcaa ggccttggca acgtgctctc ccggattgca 960  
gagatctaca tcttgtccca gcccttcatg gtgaggatca tggccacaga gcctcccata 1020  
atcaatctac aaccaggcaa tttcaccctg gacatccctg cctccatcat gatgctcacc 1080  
caacccaaga actccacagt tgaaaccatc gtttccatgg acttcgttgc tagtaccagt 1140  
gttggcctgg ttattttggg acaaagactg gtctgctcct tgtctctgaa cagattccgc 1200

cttgctttgc	cagagtccaa	tcgcagcaac	attgaggtct	tgaggtttga	aaatattcta	1260
tcgtccattc	ttcacttttg	agtcctccca	ctggccaatg	caaaattgca	gcaaggattt	1320
cctctgcca	atccacacaa	attcttattc	gtcaattcag	atattgaagt	tcttgagggt	1380
ttccttttga	tttccaccga	cctgaagtat	gaaacatcct	caaagcagca	gccaagtttc	1440
cacgtatggg	aaggtctgaa	cctgataagc	agacagtgga	gggggaagtc	agccccttga	1500
ttgccggttt	gcaattcacc	ccaggaagta	aatggtcctt	aatcctacaa	ctactgtaaa	1560
cccagaagg	aaagacagta	cacactggaa	ttgtaaagcc	cttgtgaatt	gcttaggcag	1620
aaagttttct	ttcttaagcc	ttcaggaacc	cagaataagg	cagactctgt	taaagggata	1680
aatagagggt	tctgaatgtg	agtgtatgca	tgctgctgt	gtctgtgttt	atgtttgttt	1740
gtttgtttgg	ggcaagaaa	attctaggac	aagagctagg	catgtacttc	tgaccagggt	1800
ggtaagcaac	tctaagtctg	tatttgtatt	ggtcattctc	agtggaaatc	ccttaggcc	1860
tctagtgggt	ttcccctacc	tgcatattgg	ttttcatgtt	ttatattcac	tgttactatc	1920
ttctgtgttt	aattaaaatt	gttttctatc	aaaaaaaaa	aaaaaaaaa	gggcggccgc	1980

<210> 34

<211> 1365

<212> DNA

<213> Homo sapiens

<400> 34

atgtgtacaa	agacaatccc	agtcctctgg	ggatgtttcc	tcctgtggaa	tctctatgtc	60
tcacccctc	agaccattta	ccctggaatc	aaggcaagga	ttactcagag	ggcacttgac	120
tatggtgttc	aagctggaat	gaagatgatt	gagcaaagtc	taaaagaaaa	gaaactccca	180
gatttaagcg	gttctgagtc	tcttgaattt	ctaaaagttg	attatgtaaa	ctacaatttt	240
tcaaataata	aatcagtgct	cttttcattt	ccaaatacct	cattggcttt	tgtgcctgga	300
gtgggaatca	aagcgtaaac	caaccatggc	actgccaaca	tcagcacaga	ctgggggttc	360
gagctccac	tttttgttct	gtataactcc	tttgtcgagc	ccatggagaa	acccatttta	420
aagaacttaa	atgaaatgct	ctgtcccatt	attgcaagt	aagtcaaagc	gctaaatgcc	480
aacctcagca	cactggagggt	tttaaccaag	attgacaact	acactctgct	ggattactcc	540
ctaatacagtt	ctccagaaat	tactgagaac	taccttgacc	tgaacttgaa	gggtgtattc	600
taccactg	aaaacctcac	cgaccccccc	ttctcaccag	ttccttttgt	gctcccagaa	660
cgagcaact	ccatgctcta	cattggaatc	gccgagtatt	tctttaaatc	tgctccttt	720
gctcatttca	cagctgggggt	tttcaatctc	actctctcca	ccgaagagat	ttccaacat	780
tttgttcaaa	actctcaagg	ccttggcaac	gtgctctccc	ggattgcaga	gatctacatc	840
ttgtcccagc	ccttcatggt	gaggatcatg	gccacagagc	ctcccataat	caatctacaa	900
ccaggcaatt	tcaccctgga	catccctgcc	tccatcatga	tgctcaccca	acccaagaac	960
tccacagttg	aaaccatcgt	ttccatggac	ttcgttgcta	gtaccagtgt	tggcctggtt	1020
attttgggac	aaagactggt	ctgctccttg	tctctgaaca	gattccgcct	tgctttgcca	1080
gagtccaatc	gcagcaacat	tgaggctctg	agggttgaaa	atattctatc	gtccattctt	1140
cactttggag	tcctcccact	ggccaatgca	aaattgcagc	aaggatttcc	tctgccaat	1200
ccacacaaat	tcttattcgt	caattcagat	attgaagttc	ttgagggttt	ccttttgatt	1260
tccaccgacc	tgaagtatga	aacatcctca	aagcagcagc	caagtttcca	cgtatgggaa	1320
ggtctgaacc	tgataagcag	acagtggagg	gggaagtcag	cccct		1365

<210> 35

<211> 455



<212> PRT

<213> Homo sapiens

<400> 35

Met Cys Thr Lys Thr Ile Pro Val Leu Trp Gly Cys Phe Leu Leu Trp  
1 5 10 15

Asn Leu Tyr Val Ser Ser Ser Gln Thr Ile Tyr Pro Gly Ile Lys Ala  
20 25 30

Arg Ile Thr Gln Arg Ala Leu Asp Tyr Gly Val Gln Ala Gly Met Lys  
35 40 45

Met Ile Glu Gln Met Leu Lys Glu Lys Lys Leu Pro Asp Leu Ser Gly  
50 55 60

Ser Glu Ser Leu Glu Phe Leu Lys Val Asp Tyr Val Asn Tyr Asn Phe  
65 70 75 80

Ser Asn Ile Lys Ile Ser Ala Phe Ser Phe Pro Asn Thr Ser Leu Ala  
85 90 95

Phe Val Pro Gly Val Gly Ile Lys Ala Leu Thr Asn His Gly Thr Ala  
100 105 110

Asn Ile Ser Thr Asp Trp Gly Phe Glu Ser Pro Leu Phe Val Leu Tyr  
115 120 125

Asn Ser Phe Ala Glu Pro Met Glu Lys Pro Ile Leu Lys Asn Leu Asn  
130 135 140

Glu Met Leu Cys Pro Ile Ile Ala Ser Glu Val Lys Ala Leu Asn Ala  
145 150 155 160

Asn Leu Ser Thr Leu Glu Val Leu Thr Lys Ile Asp Asn Tyr Thr Leu  
165 170 175

Leu Asp Tyr Ser Leu Ile Ser Ser Pro Glu Ile Thr Glu Asn Tyr Leu  
180 185 190

Asp Leu Asn Leu Lys Gly Val Phe Tyr Pro Leu Glu Asn Leu Thr Asp  
195 200 205

Pro Pro Phe Ser Pro Val Pro Phe Val Leu Pro Glu Arg Ser Asn Ser  
210 215 220

Met Leu Tyr Ile Gly Ile Ala Glu Tyr Phe Phe Lys Ser Ala Ser Phe  
225 230 235 240

09578063-052400



<400> 36

Met Cys Thr Lys Thr Ile Pro Val Leu Trp Gly Cys Phe Leu Leu Trp  
1 5 10 15

Asn Leu Tyr Val Ser Ser Ser  
20

<210> 37

<211> 432

<212> PRT

<213> Homo sapiens

<400> 37

Gln Thr Ile Tyr Pro Gly Ile Lys Ala Arg Ile Thr Gln Arg Ala Leu  
1 5 10 15

Asp Tyr Gly Val Gln Ala Gly Met Lys Met Ile Glu Gln Met Leu Lys  
20 25 30

Glu Lys Lys Leu Pro Asp Leu Ser Gly Ser Glu Ser Leu Glu Phe Leu  
35 40 45

Lys Val Asp Tyr Val Asn Tyr Asn Phe Ser Asn Ile Lys Ile Ser Ala  
50 55 60

Phe Ser Phe Pro Asn Thr Ser Leu Ala Phe Val Pro Gly Val Gly Ile  
65 70 75 80

Lys Ala Leu Thr Asn His Gly Thr Ala Asn Ile Ser Thr Asp Trp Gly  
85 90 95

Phe Glu Ser Pro Leu Phe Val Leu Tyr Asn Ser Phe Ala Glu Pro Met  
100 105 110

Glu Lys Pro Ile Leu Lys Asn Leu Asn Glu Met Leu Cys Pro Ile Ile  
115 120 125

Ala Ser Glu Val Lys Ala Leu Asn Ala Asn Leu Ser Thr Leu Glu Val  
130 135 140

Leu Thr Lys Ile Asp Asn Tyr Thr Leu Leu Asp Tyr Ser Leu Ile Ser  
145 150 155 160

Ser Pro Glu Ile Thr Glu Asn Tyr Leu Asp Leu Asn Leu Lys Gly Val  
165 170 175

Phe Tyr Pro Leu Glu Asn Leu Thr Asp Pro Pro Phe Ser Pro Val Pro  
180 185 190  
Phe Val Leu Pro Glu Arg Ser Asn Ser Met Leu Tyr Ile Gly Ile Ala  
195 200 205  
Glu Tyr Phe Phe Lys Ser Ala Ser Phe Ala His Phe Thr Ala Gly Val  
210 215 220  
Phe Asn Leu Thr Leu Ser Thr Glu Glu Ile Ser Asn His Phe Val Gln  
225 230 235 240  
Asn Ser Gln Gly Leu Gly Asn Val Leu Ser Arg Ile Ala Glu Ile Tyr  
245 250 255  
Ile Leu Ser Gln Pro Phe Met Val Arg Ile Met Ala Thr Glu Pro Pro  
260 265 270  
Ile Ile Asn Leu Gln Pro Gly Asn Phe Thr Leu Asp Ile Pro Ala Ser  
275 280 285  
Ile Met Met Leu Thr Gln Pro Lys Asn Ser Thr Val Glu Thr Ile Val  
290 295 300  
Ser Met Asp Phe Val Ala Ser Thr Ser Val Gly Leu Val Ile Leu Gly  
305 310 315 320  
Gln Arg Leu Val Cys Ser Leu Ser Leu Asn Arg Phe Arg Leu Ala Leu  
325 330 335  
Pro Glu Ser Asn Arg Ser Asn Ile Glu Val Leu Arg Phe Glu Asn Ile  
340 345 350  
Leu Ser Ser Ile Leu His Phe Gly Val Leu Pro Leu Ala Asn Ala Lys  
355 360 365  
Leu Gln Gln Gly Phe Pro Leu Pro Asn Pro His Lys Phe Leu Phe Val  
370 375 380  
Asn Ser Asp Ile Glu Val Leu Glu Gly Phe Leu Leu Ile Ser Thr Asp  
385 390 395 400  
Leu Lys Tyr Glu Thr Ser Ser Lys Gln Gln Pro Ser Phe His Val Trp  
405 410 415  
Glu Gly Leu Asn Leu Ile Ser Arg Gln Trp Arg Gly Lys Ser Ala Pro  
420 425 430

09578063-052400

<210> 38  
 <211> 483  
 <212> PRT  
 <213> Homo sapiens

<400> 38

Met	Ala	Arg	Gly	Pro	Cys	Asn	Ala	Pro	Arg	Trp	Val	Ser	Leu	Met	Val
1				5				10					15		
Leu	Val	Ala	Ile	Gly	Thr	Ala	Val	Thr	Ala	Ala	Val	Asn	Pro	Gly	Val
			20					25					30		
Val	Val	Arg	Ile	Ser	Gln	Lys	Gly	Leu	Asp	Tyr	Ala	Ser	Gln	Gln	Gly
			35				40					45			
Thr	Ala	Ala	Leu	Gln	Lys	Glu	Leu	Lys	Arg	Ile	Lys	Ile	Pro	Asp	Tyr
	50					55					60				
Ser	Asp	Ser	Phe	Lys	Ile	Lys	His	Leu	Gly	Lys	Gly	His	Tyr	Ser	Phe
	65				70					75					80
Tyr	Ser	Met	Asp	Ile	Arg	Glu	Phe	Gln	Leu	Pro	Ser	Ser	Gln	Ile	Ser
				85					90					95	
Met	Val	Pro	Asn	Val	Gly	Leu	Lys	Phe	Ser	Ile	Ser	Asn	Ala	Asn	Ile
			100					105					110		
Lys	Ile	Ser	Gly	Lys	Trp	Lys	Ala	Gln	Lys	Arg	Phe	Leu	Lys	Met	Ser
		115					120					125			
Gly	Asn	Phe	Asp	Leu	Ser	Ile	Glu	Gly	Met	Ser	Ile	Ser	Ala	Asp	Leu
	130					135					140				
Lys	Leu	Gly	Ser	Asn	Pro	Thr	Ser	Gly	Lys	Pro	Thr	Ile	Thr	Cys	Ser
145					150					155				160	
Ser	Cys	Ser	Ser	His	Ile	Asn	Ser	Val	His	Val	His	Ile	Ser	Lys	Ser
				165					170					175	
Lys	Val	Gly	Trp	Leu	Ile	Gln	Leu	Phe	His	Lys	Lys	Ile	Glu	Ser	Ala
			180					185					190		
Leu	Arg	Asn	Lys	Met	Asn	Ser	Gln	Val	Cys	Glu	Lys	Val	Thr	Asn	Ser
		195					200					205			

09573063-052400



Val Val Leu Gln Pro His Gln Asn Phe Leu Leu Phe Gly Ala Asp Val  
 465 470 475 480

Val Tyr Lys

<210> 39

<211> 481

<212> PRT

<213> Homo sapiens

<400> 39

Met Gly Ala Leu Ala Arg Ala Leu Pro Ser Ile Leu Leu Ala Leu Leu  
 1 5 10 15

Leu Thr Ser Thr Pro Glu Ala Leu Gly Ala Asn Pro Gly Leu Val Ala  
 20 25 30

Arg Ile Thr Asp Lys Gly Leu Gln Tyr Ala Ala Gln Glu Gly Leu Leu  
 35 40 45

Ala Leu Gln Ser Glu Leu Leu Arg Ile Thr Leu Pro Asp Phe Thr Gly  
 50 55 60

Asp Leu Arg Ile Pro His Val Gly Arg Gly Arg Tyr Glu Phe His Ser  
 65 70 75 80

Leu Asn Ile His Glu Phe Gln Leu Pro Ser Ser Gln Ile Ser Met Val  
 85 90 95

Pro Asn Val Gly Leu Lys Phe Ser Ile Ser Asn Ala Asn Ile Lys Ile  
 100 105 110

Ser Gly Lys Trp Lys Ala Gln Lys Arg Phe Leu Lys Met Ser Gly Asn  
 115 120 125

Phe Asp Leu Ser Ile Glu Gly Met Ser Ile Ser Ala Asp Leu Lys Leu  
 130 135 140

Gly Ser Asn Pro Thr Ser Gly Lys Pro Thr Ile Thr Cys Ser Ser Cys  
 145 150 155 160

Ser Ser His Ile Asn Ser Val His Val His Ile Ser Lys Ser Lys Val  
 165 170 175

Gly Trp Leu Ile Gln Leu Phe His Lys Lys Ile Glu Ser Ala Leu Arg

09578063.052400

180	185	190
Asn Lys Met Asn Ser Gln Val Cys Glu Lys Val Thr Asn Ser Val Ser		
195	200	205
Ser Lys Leu Gln Pro Tyr Phe Gln Thr Leu Pro Val Met Thr Lys Ile		
210	215	220
Asp Ser Val Ala Gly Ile Asn Tyr Gly Leu Val Ala Pro Pro Ala Thr		
225	230	235
Thr Ala Glu Thr Leu Asp Val Gln Met Lys Gly Glu Phe Tyr Ser Glu		
	245	250
Asn His His Asn Pro Pro Pro Phe Ala Pro Pro Val Met Glu Phe Pro		
	260	265
Ala Ala His Asp Arg Met Val Tyr Leu Gly Leu Ser Asp Tyr Phe Phe		
	275	280
Asn Thr Ala Gly Leu Val Tyr Gln Glu Ala Gly Val Leu Lys Met Thr		
	290	295
Leu Arg Asp Asp Met Ile Pro Lys Glu Ser Lys Phe Arg Leu Thr Thr		
305	310	315
Lys Phe Phe Gly Thr Phe Leu Pro Glu Val Ala Lys Lys Phe Pro Asn		
	325	330
Met Lys Ile Gln Ile His Val Ser Ala Ser Thr Pro Pro His Leu Ser		
	340	345
Val Gln Pro Thr Gly Leu Thr Phe Tyr Pro Ala Val Asp Val Gln Ala		
	355	360
Leu Ala Val Leu Pro Asn Ser Ser Leu Ala Ser Leu Phe Leu Ile Gly		
	370	375
Met His Thr Thr Gly Ser Met Glu Val Ser Ala Glu Ser Asn Arg Leu		
385	390	395
Val Gly Glu Leu Lys Leu Asp Arg Leu Leu Leu Glu Leu Lys His Ser		
	405	410
Asn Ile Gly Pro Phe Pro Val Glu Leu Leu Gln Asp Ile Met Asn Tyr		
	420	425
Ile Val Pro Ile Leu Val Leu Pro Arg Val Asn Glu Lys Leu Gln Lys		
		430



435                      440                      445  
 Gly Phe Pro Leu Pro Thr Pro Ala Arg Val Gln Leu Tyr Asn Val Val  
 450                      455                      460  
 Leu Gln Pro His Gln Asn Phe Leu Leu Phe Gly Ala Asp Val Val Tyr  
 465                      470                      475                      480  
 Lys

<210> 40  
 <211> 383  
 <212> PRT  
 <213> Caenorhabditis elegans

<400> 40  
 Met Arg Ile Ala His Ala Ser Ser Arg Gly Asn Ile Ser Ile Phe Ser  
 1                      5                      10                      15  
 Val Phe Leu Ile Pro Leu Ile Ala Tyr Ile Leu Ile Leu Pro Gly Val  
 20                      25                      30  
 Arg Arg Lys Arg Val Val Thr Thr Val Thr Tyr Val Leu Met Leu Ala  
 35                      40                      45  
 Val Gly Gly Ala Leu Ile Ala Ser Leu Ile Tyr Pro Cys Trp Ala Ser  
 50                      55                      60  
 Gly Ser Gln Met Ile Tyr Thr Gln Phe Arg Gly His Ser Asn Glu Arg  
 65                      70                      75                      80  
 Ile Leu Ala Lys Ile Gly Val Glu Ile Gly Leu Gln Lys Val Asn Val  
 85                      90                      95  
 Thr Leu Lys Phe Glu Arg Leu Leu Ser Ser Asn Asp Val Leu Pro Gly  
 100                      105                      110  
 Ser Asp Met Thr Glu Leu Tyr Tyr Asn Glu Gly Phe Asp Ile Ser Gly  
 115                      120                      125  
 Ile Ser Ser Met Ala Glu Ala Leu His His Gly Leu Glu Asn Gly Leu  
 130                      135                      140  
 Pro Tyr Pro Met Leu Ser Val Leu Glu Tyr Phe Ser Leu Asn Gln Asp  
 145                      150                      155                      160

09578063.052400

Ser Phe Asp Trp Gly Arg His Tyr Arg Val Ala Gly His Tyr Thr His  
 165 170 175  
 Ala Ala Ile Trp Phe Ala Phe Ala Cys Trp Cys Leu Ser Val Val Leu  
 180 185 190  
 Met Leu Phe Leu Pro His Asn Ala Tyr Lys Ser Ile Leu Ala Thr Gly  
 195 200 205  
 Ile Ser Cys Leu Ile Ala Cys Leu Val Tyr Leu Leu Leu Ser Pro Cys  
 210 215 220  
 Glu Leu Arg Ile Ala Phe Thr Gly Glu Asn Phe Glu Arg Val Asp Leu  
 225 230 235 240  
 Thr Ala Thr Phe Ser Phe Cys Phe Tyr Leu Ile Phe Ala Ile Gly Ile  
 245 250 255  
 Leu Cys Val Leu Cys Gly Leu Gly Leu Gly Ile Cys Glu His Trp Arg  
 260 265 270  
 Ile Tyr Thr Leu Ser Thr Phe Leu Asp Ala Ser Leu Asp Glu His Val  
 275 280 285  
 Gly Pro Lys Trp Lys Lys Leu Pro Thr Gly Gly Pro Ala Leu Gln Gly  
 290 295 300  
 Val Gln Ile Gly Ala Tyr Gly Thr Asn Thr Thr Asn Ser Ser Arg Asp  
 305 310 315 320  
 Lys Asn Asp Ile Ser Ser Asp Lys Thr Ala Gly Ser Ser Gly Phe Gln  
 325 330 335  
 Ser Arg Thr Ser Thr Cys Gln Ser Ser Ala Ser Ser Ala Ser Leu Arg  
 340 345 350  
 Ser Gln Ser Ser Ile Glu Thr Val His Asp Glu Ala Glu Leu Glu Arg  
 355 360 365  
 Thr His Val His Phe Leu Gln Glu Pro Cys Ser Ser Ser Ser Thr  
 370 375 380

<210> 41  
 <211> 399  
 <212> PRT  
 <213> Homo sapiens

<400> 41

Met Lys Met Arg Phe Leu Gly Leu Val Val Cys Leu Val Leu Trp Pro  
1 5 10 15

Leu His Ser Glu Gly Ser Gly Gly Lys Leu Thr Ala Val Asp Pro Glu  
20 25 30

Thr Asn Met Asn Val Ser Glu Ile Ile Ser Tyr Trp Gly Phe Pro Ser  
35 40 45

Glu Glu Tyr Leu Val Glu Thr Glu Asp Gly Tyr Ile Leu Cys Leu Asn  
50 55 60

Arg Ile Pro His Gly Arg Lys Asn His Ser Asp Lys Gly Pro Lys Pro  
65 70 75 80

Val Val Phe Leu Gln His Gly Leu Leu Ala Asp Ser Ser Asn Trp Val  
85 90 95

Thr Asn Leu Ala Asn Ser Ser Leu Gly Phe Ile Leu Ala Asp Ala Gly  
100 105 110

Phe Asp Val Trp Met Gly Asn Ser Arg Gly Asn Thr Trp Ser Arg Lys  
115 120 125

His Lys Thr Leu Ser Val Ser Gln Asp Glu Phe Trp Ala Phe Ser Tyr  
130 135 140

Asp Glu Met Ala Lys Tyr Asp Leu Pro Ala Ser Ile Asn Phe Ile Leu  
145 150 155 160

Asn Lys Thr Gly Gln Glu Gln Val Tyr Tyr Val Gly His Ser Gln Gly  
165 170 175

Thr Thr Ile Gly Phe Ile Ala Phe Ser Gln Ile Pro Glu Leu Ala Lys  
180 185 190

Arg Ile Lys Met Phe Phe Ala Leu Gly Pro Val Ala Ser Val Ala Phe  
195 200 205

Cys Thr Ser Pro Met Ala Lys Leu Gly Arg Leu Pro Asp His Leu Ile  
210 215 220

Lys Asp Leu Phe Gly Asp Lys Glu Phe Leu Pro Gln Ser Ala Phe Leu  
225 230 235 240

Lys Trp Leu Gly Thr His Val Cys Thr His Val Ile Leu Lys Glu Leu  
245 250 255

004250"E908750

Cys Gly Asn Leu Cys Phe Leu Leu Cys Gly Phe Asn Glu Arg Asn Leu  
 260 265 270

Asn Met Ser Arg Val Asp Val Tyr Thr Thr His Ser Pro Ala Gly Thr  
 275 280 285

Ser Val Gln Asn Met Leu His Trp Ser Gln Ala Val Lys Phe Gln Lys  
 290 295 300

Phe Gln Ala Phe Asp Trp Gly Ser Ser Ala Lys Asn Tyr Phe His Tyr  
 305 310 315 320

Asn Gln Ser Tyr Pro Pro Thr Tyr Asn Val Lys Asp Met Leu Val Pro  
 325 330 335

Thr Ala Val Trp Ser Gly Gly His Asp Trp Leu Ala Asp Val Tyr Asp  
 340 345 350

Val Asn Ile Leu Leu Thr Gln Ile Thr Asn Leu Val Phe His Glu Ser  
 355 360 365

Ile Pro Glu Trp Glu His Leu Asp Phe Ile Trp Gly Leu Asp Ala Pro  
 370 375 380

Trp Arg Leu Tyr Asn Lys Ile Ile Asn Leu Met Arg Lys Tyr Gln  
 385 390 395

<210> 42  
 <211> 19  
 <212> PRT  
 <213> Mus sp.

<400> 42  
 Met Ala Pro Pro Ala Ala Arg Leu Ala Leu Leu Ser Ala Ala Ala Leu  
 1 5 10 15

Thr Leu Ala

<210> 43  
 <211> 451  
 <212> PRT  
 <213> Mus sp.

<400> 43

Ala	Arg	Pro	Ala	Pro	Gly	Pro	Arg	Ser	Gly	Pro	Glu	Cys	Phe	Thr	Ala	1	5	10	15
Asn	Gly	Ala	Asp	Tyr	Arg	Gly	Thr	Gln	Ser	Trp	Thr	Ala	Leu	Gln	Gly	20	25	30	
Gly	Lys	Pro	Cys	Leu	Phe	Trp	Asn	Glu	Thr	Phe	Gln	His	Pro	Tyr	Asn	35	40	45	
Thr	Leu	Lys	Tyr	Pro	Asn	Gly	Glu	Gly	Gly	Leu	Gly	Glu	His	Asn	Tyr	50	55	60	
Cys	Arg	Asn	Pro	Asp	Gly	Asp	Val	Ser	Pro	Trp	Cys	Tyr	Val	Ala	Glu	65	70	75	80
His	Glu	Asp	Gly	Val	Tyr	Trp	Lys	Tyr	Cys	Glu	Ile	Pro	Ala	Cys	Gln	85	90	95	
Met	Pro	Gly	Asn	Leu	Gly	Cys	Tyr	Lys	Asp	His	Gly	Asn	Pro	Pro	Pro	100	105	110	
Leu	Thr	Gly	Thr	Ser	Lys	Thr	Ser	Asn	Lys	Leu	Thr	Ile	Gln	Thr	Cys	115	120	125	
Ile	Ser	Phe	Cys	Arg	Ser	Gln	Arg	Phe	Lys	Phe	Ala	Gly	Met	Glu	Ser	130	135	140	
Gly	Tyr	Ala	Cys	Phe	Cys	Gly	Asn	Asn	Pro	Asp	Tyr	Trp	Lys	His	Gly	145	150	155	160
Glu	Ala	Ala	Ser	Thr	Glu	Cys	Asn	Ser	Val	Cys	Phe	Gly	Asp	His	Thr	165	170	175	
Gln	Pro	Cys	Gly	Gly	Asp	Gly	Arg	Ile	Ile	Leu	Phe	Asp	Thr	Leu	Val	180	185	190	
Gly	Ala	Cys	Gly	Gly	Asn	Tyr	Ser	Ala	Met	Ala	Ala	Val	Val	Tyr	Ser	195	200	205	
Pro	Asp	Phe	Pro	Asp	Thr	Tyr	Ala	Thr	Gly	Arg	Val	Cys	Tyr	Trp	Thr	210	215	220	
Ile	Arg	Val	Pro	Gly	Ala	Ser	Arg	Ile	His	Phe	Asn	Phe	Thr	Leu	Phe	225	230	235	240
Asp	Ile	Arg	Asp	Ser	Ala	Asp	Met	Val	Glu	Leu	Leu	Asp	Gly	Tyr	Thr	245	250	255	

004250-050000

His Arg Val Leu Val Arg Leu Ser Gly Arg Ser Arg Pro Pro Leu Ser  
260 265 270

Phe Asn Val Ser Leu Asp Phe Val Ile Leu Tyr Phe Phe Ser Asp Arg  
275 280 285

Ile Asn Gln Ala Gln Gly Phe Ala Val Leu Tyr Gln Ala Thr Lys Glu  
290 295 300

Glu Pro Pro Gln Glu Arg Pro Ala Val Asn Gln Thr Leu Ala Glu Val  
305 310 315 320

Ile Thr Glu Gln Ala Asn Leu Ser Val Ser Ala Ala His Ser Ser Lys  
325 330 335

Val Leu Tyr Val Ile Thr Pro Ser Pro Ser His Pro Pro Gln Thr Ala  
340 345 350

Gln Val Ala Ile Pro Gly His Arg Gln Leu Gly Pro Thr Ala Thr Glu  
355 360 365

Trp Lys Asp Gly Leu Cys Thr Ala Trp Arg Pro Ser Ser Ser Ser Gln  
370 375 380

Ser Gln Gln Leu Ser Gln Arg Phe Phe Cys Met Ser His Leu Asn Leu  
385 390 395 400

Ile Glu Ser Leu His Gln Glu Thr Leu Gly Thr Val Val Ser Leu Gly  
405 410 415

Leu Leu Glu Ile Ser Gly Pro Phe Ser Met Asn Leu Pro Leu Gln Ser  
420 425 430

Pro Ser Leu Arg Arg Ser Ser Arg Val Arg Val Asn Lys Met Thr Ala  
435 440 445

Ile Pro Ser  
450

<210> 44

<211> 150

<212> PRT

<213> Mus sp.

<400> 44

Lys Lys His Cys Trp Tyr Phe Glu Gly Leu Tyr Pro Thr Tyr Tyr Ile  
1 5 10 15

004250-E9087560

Cys Arg Ser Tyr Glu Asp Cys Cys Gly Ser Arg Cys Cys Val Arg Ala  
20 25 30

Leu Ser Ile Gln Arg Leu Trp Tyr Phe Trp Phe Leu Leu Met Met Gly  
35 40 45

Val Leu Phe Cys Cys Gly Ala Gly Phe Phe Ile Arg Arg Arg Met Tyr  
50 55 60

Pro Pro Pro Leu Ile Glu Glu Pro Thr Phe Asn Val Ser Tyr Thr Arg  
65 70 75 80

Gln Pro Pro Asn Pro Ala Pro Gly Ala Gln Gln Met Gly Pro Pro Tyr  
85 90 95

Tyr Thr Asp Pro Gly Gly Pro Gly Met Asn Pro Val Gly Asn Thr Met  
100 105 110

Ala Met Ala Phe Gln Val Gln Pro Asn Ser Pro His Gly Gly Thr Thr  
115 120 125

Tyr Pro Pro Pro Pro Ser Tyr Cys Asn Thr Pro Pro Pro Pro Tyr Glu  
130 135 140

Gln Val Val Lys Asp Lys  
145 150

<210> 45

<211> 2044 *C DNA*

<212> DNA

<213> Homo sapiens

<400> 45

gtcgacccac gcgtccgggg aattgcagca ggaaaatatg tgaagagttt ttaaaccac 60  
aaattcttct tacttttagaa ttagttgtta cattggcagg aaaaaataaa tgcagatgtt 120  
ggaccatgtt ggaaaccttg tcaagacagt ggattgtctc acacagaatg gaaatgtggc 180  
ttctgattct ggtggcgtat atgttccaga gaaatgtgaa ttcagtacat atgccaacta 240  
aagctgtgga cccagaagca ttcatagaata ttagtgaaat catccaacat caaggctatc 300  
cctgtgagga atatgaagtc gcaactgaag atgggtatat cctttctgtt aacaggattc 360  
ctcgaggcct agtgcaacct aagaagacag gttccaggcc tgtgggtgtta ctgcagcatg 420  
gcctagttagg aggtgctagc aactggattt ccaacctgcc caacaatagc ctgggcttca 480  
ttctggcaga tgctggtttt gacgtgtgga tggggaacag caggggaaac gcctgggtctc 540  
gaaaacacaa gacactctcc atagaccaag atgagttctg ggctttcagt tatgatgaga 600  
tggctagggtt tgaccttcct gcagtgataa actttatttt gcagaaaacg ggccaggaaa 660  
agatctatta tgcggctat tcacagggca ccaccatggg ctttattgca ttttccacca 720  
tgccagagct ggctcagaaa atcaaaatgt attttgcttt agcaccata gccactgtta 780

```

agcatgcaaaa aagccccggg accaaatctt tgttgctgcc agatatgatg atcaagggat 840
tggtttggcaa aaaagaatct ctgtatcaga ccagatttct cagacaactt gttatttacc 900
tttgtggcca ggtgattctt gatcagattt gtagtaatat catgttactt ctgggtggat 960
tcaacaccaa caatatgaac atgagccgag caagtgtata tgctgcccac actcttgctg 1020
gaacatctgt gcaaaatatt ctacactgga gccaggcagt gaattctggt gaactccggg 1080
catttgactg ggggagtgag accaaaaatc tggaaaaatg caatcagcca actcctgtaa 1140
ggtacagagt cagagatatg acggtcccta cagcaatgtg gacaggaggt caggactggc 1200
tttcaaatcc agaagacgtg aaaatgctgc tctctgaggt gaccaacctc atctaccata 1260
agaatattcc tgaatgggct cacgtggatt tcatctgggg tttggatgct cctcaccgta 1320
tgtacaatga aatcatccat ctgatgcagc aggaggagac caacctttcc cagggacggg 1380
gtgaggccgt attgtgaagc atctgacact gacgatctta ggacaacctc ctgaggggatg 1440
gggctaggac ccatgaaggc agaattacgg agagcagaga cctagtatac atttttcaga 1500
ttccctgcac ttggcactaa atccgacact tacattttaca ttttttttct gtaaattaaa 1560
gtacttatta ggtaaataga ggttttgtat gctattatat attctacat cttgaagggt 1620
aggttttacc tgatagccag aaaatatcta gacattctct atatcattca ggtaaactctc 1680
tttaaaacac ctattgtttt ttctataagc catatttttg gagcactaaa gtaaaatggc 1740
aaattgggac agatattgag gtctggagtc tgtggattat tgttgacttt gacaaaataa 1800
gctagacatt ttcacctgtg tgccacagag acataacact acctcaggaa gctgagctgc 1860
tttaaggaca acaacaacaa aatcagtgtt acagtatgga tgaaatctat gttaagcatt 1920
ctcagaataa ggccaagttt tatagttgca tctcagggaa gaaaatttta taggatgttt 1980
atgagttctc caataaatgc attctgcatt acataaaaaa aaaaaaaaaa aaaagggcgg 2040
ccgc
2044

```

<210> 46

<211> 1269

ORF

<212> DNA

<213> Homo sapiens

<400> 46

```

atgttgaaaa ccttgtcaag acagtggatt gtctcacaca gaatggaaat gtggcttctg 60
attctgggtg cgtatatgtt ccagagaaat gtgaattcag tacatatgcc aactaaagct 120
gtggacccag aagcattcat gaattattagt gaaatcatcc aacatcaagg ctatccctgt 180
gaggaatatg aagtcgcaac tgaagatggg tatatccttt ctgttaacag gattcctcga 240
ggcctagtgc aacctaagaa gacaggttcc aggcctgtgg tgttactgca gcatggccta 300
gttgagggtg ctagcaactg gatttccaac ctgcccaaca atagcctggg cttcattctg 360
gcagatgctg gttttgacgt gtggatgggg aacagcaggg gaaacgcctg gtctcgaaaa 420
cacaagacac tctccataga ccaagatgag ttctgggctt tcagttatga tgagatggct 480
aggtttgacc ttctgcagt gataaacttt attttgcaga aaacgggcca ggaaaagatc 540
tattatgtcg gctattcaca gggcaccacc atgggcttta ttgcattttc caccatgcca 600
gagctggctc agaaaaatcaa aatgtatttt gctttagcac ccatagccac tgtaagcat 660
gcaaaaaagc ccgggaccaaa atttttgttg ctgccagata tgatgatcaa gggattgttt 720
ggcaaaaaag aatttctgta tcagaccaga tttctcagac aacttgttat ttacctttgt 780
ggccagggtg ttcttgatca gatttgtagt aatatcatgt tacttctggg tggattcaac 840
accaacaata tgaacatgag ccgagcaagt gtatatgctg cccacactct tgctggaaca 900
tctgtgcaaa atattctaca ctggagccag gcagtgaatt ctggtgaact ccgggcattt 960
gactggggga gtgagaccaa aaatctggaa aaatgcaatc agccaactcc tgtaagggtac 1020
agagtcagag atatgacggt ccctacagca atgtggacag gaggtcagga ctggctttca 1080

```



aatccagaag acgtgaaaat gctgctctct gaggtgacca acctcatcta ccataagaat 1140  
 attcctgaat gggctcacgt ggatttcac tggggtttgg atgctcctca ccgtatgtac 1200  
 aatgaaatca tccatctgat gcagcaggag gagaccaacc tttcccaggg acggtgtgag 1260  
 gccgtattg 1269

<210> 47

<211> 423

<212> PRT

<213> Homo sapiens

<400> 47

Met Leu Glu Thr Leu Ser Arg Gln Trp Ile Val Ser His Arg Met Glu  
 1 5 10 15

Met Trp Leu Leu Ile Leu Val Ala Tyr Met Phe Gln Arg Asn Val Asn  
 20 25 30

Ser Val His Met Pro Thr Lys Ala Val Asp Pro Glu Ala Phe Met Asn  
 35 40 45

Ile Ser Glu Ile Ile Gln His Gln Gly Tyr Pro Cys Glu Glu Tyr Glu  
 50 55 60

Val Ala Thr Glu Asp Gly Tyr Ile Leu Ser Val Asn Arg Ile Pro Arg  
 65 70 75 80

Gly Leu Val Gln Pro Lys Lys Thr Gly Ser Arg Pro Val Val Leu Leu  
 85 90 95

Gln His Gly Leu Val Gly Gly Ala Ser Asn Trp Ile Ser Asn Leu Pro  
 100 105 110

Asn Asn Ser Leu Gly Phe Ile Leu Ala Asp Ala Gly Phe Asp Val Trp  
 115 120 125

Met Gly Asn Ser Arg Gly Asn Ala Trp Ser Arg Lys His Lys Thr Leu  
 130 135 140

Ser Ile Asp Gln Asp Glu Phe Trp Ala Phe Ser Tyr Asp Glu Met Ala  
 145 150 155 160

Arg Phe Asp Leu Pro Ala Val Ile Asn Phe Ile Leu Gln Lys Thr Gly  
 165 170 175

Gln Glu Lys Ile Tyr Tyr Val Gly Tyr Ser Gln Gly Thr Thr Met Gly  
 180 185 190

004250-05087550

Phe Ile Ala Phe Ser Thr Met Pro Glu Leu Ala Gln Lys Ile Lys Met  
 195 200 205  
 Tyr Phe Ala Leu Ala Pro Ile Ala Thr Val Lys His Ala Lys Ser Pro  
 210 215 220  
 Gly Thr Lys Phe Leu Leu Leu Pro Asp Met Met Ile Lys Gly Leu Phe  
 225 230 235 240  
 Gly Lys Lys Glu Phe Leu Tyr Gln Thr Arg Phe Leu Arg Gln Leu Val  
 245 250 255  
 Ile Tyr Leu Cys Gly Gln Val Ile Leu Asp Gln Ile Cys Ser Asn Ile  
 260 265 270  
 Met Leu Leu Leu Gly Gly Phe Asn Thr Asn Asn Met Asn Met Ser Arg  
 275 280 285  
 Ala Ser Val Tyr Ala Ala His Thr Leu Ala Gly Thr Ser Val Gln Asn  
 290 295 300  
 Ile Leu His Trp Ser Gln Ala Val Asn Ser Gly Glu Leu Arg Ala Phe  
 305 310 315 320  
 Asp Trp Gly Ser Glu Thr Lys Asn Leu Glu Lys Cys Asn Gln Pro Thr  
 325 330 335  
 Pro Val Arg Tyr Arg Val Arg Asp Met Thr Val Pro Thr Ala Met Trp  
 340 345 350  
 Thr Gly Gly Gln Asp Trp Leu Ser Asn Pro Glu Asp Val Lys Met Leu  
 355 360 365  
 Leu Ser Glu Val Thr Asn Leu Ile Tyr His Lys Asn Ile Pro Glu Trp  
 370 375 380  
 Ala His Val Asp Phe Ile Trp Gly Leu Asp Ala Pro His Arg Met Tyr  
 385 390 395 400  
 Asn Glu Ile Ile His Leu Met Gln Gln Glu Glu Thr Asn Leu Ser Gln  
 405 410 415  
 Gly Arg Cys Glu Ala Val Leu  
 420

<210> 48

<211> 33

<212> PRT

<213> Homo sapiens

<400> 48

Met Leu Glu Thr Leu Ser Arg Gln Trp Ile Val Ser His Arg Met Glu  
1 5 10 15

Met Trp Leu Leu Ile Leu Val Ala Tyr Met Phe Gln Arg Asn Val Asn  
20 25 30

Ser

<210> 49

<211> 390

<212> PRT

<213> Homo sapiens

<400> 49

Val His Met Pro Thr Lys Ala Val Asp Pro Glu Ala Phe Met Asn Ile  
1 5 10 15

Ser Glu Ile Ile Gln His Gln Gly Tyr Pro Cys Glu Glu Tyr Glu Val  
20 25 30

Ala Thr Glu Asp Gly Tyr Ile Leu Ser Val Asn Arg Ile Pro Arg Gly  
35 40 45

Leu Val Gln Pro Lys Lys Thr Gly Ser Arg Pro Val Val Leu Leu Gln  
50 55 60

His Gly Leu Val Gly Gly Ala Ser Asn Trp Ile Ser Asn Leu Pro Asn  
65 70 75 80

Asn Ser Leu Gly Phe Ile Leu Ala Asp Ala Gly Phe Asp Val Trp Met  
85 90 95

Gly Asn Ser Arg Gly Asn Ala Trp Ser Arg Lys His Lys Thr Leu Ser  
100 105 110

Ile Asp Gln Asp Glu Phe Trp Ala Phe Ser Tyr Asp Glu Met Ala Arg  
115 120 125

Phe Asp Leu Pro Ala Val Ile Asn Phe Ile Leu Gln Lys Thr Gly Gln  
130 135 140

Glu Lys Ile Tyr Tyr Val Gly Tyr Ser Gln Gly Thr Thr Met Gly Phe

145		150		155		160
Ile Ala Phe Ser Thr Met Pro Glu Leu Ala Gln Lys Ile Lys Met Tyr						
	165		170		175	
Phe Ala Leu Ala Pro Ile Ala Thr Val Lys His Ala Lys Ser Pro Gly						
	180		185		190	
Thr Lys Phe Leu Leu Leu Pro Asp Met Met Ile Lys Gly Leu Phe Gly						
	195		200		205	
Lys Lys Glu Phe Leu Tyr Gln Thr Arg Phe Leu Arg Gln Leu Val Ile						
	210		215		220	
Tyr Leu Cys Gly Gln Val Ile Leu Asp Gln Ile Cys Ser Asn Ile Met						
225		230		235		240
Leu Leu Leu Gly Gly Phe Asn Thr Asn Asn Met Asn Met Ser Arg Ala						
	245		250		255	
Ser Val Tyr Ala Ala His Thr Leu Ala Gly Thr Ser Val Gln Asn Ile						
	260		265		270	
Leu His Trp Ser Gln Ala Val Asn Ser Gly Glu Leu Arg Ala Phe Asp						
	275		280		285	
Trp Gly Ser Glu Thr Lys Asn Leu Glu Lys Cys Asn Gln Pro Thr Pro						
	290		295		300	
Val Arg Tyr Arg Val Arg Asp Met Thr Val Pro Thr Ala Met Trp Thr						
305		310		315		320
Gly Gly Gln Asp Trp Leu Ser Asn Pro Glu Asp Val Lys Met Leu Leu						
	325		330		335	
Ser Glu Val Thr Asn Leu Ile Tyr His Lys Asn Ile Pro Glu Trp Ala						
	340		345		350	
His Val Asp Phe Ile Trp Gly Leu Asp Ala Pro His Arg Met Tyr Asn						
	355		360		365	
Glu Ile Ile His Leu Met Gln Gln Glu Glu Thr Asn Leu Ser Gln Gly						
	370		375		380	
Arg Cys Glu Ala Val Leu						
385		390				

<210> 50  
 <211> 221  
 <212> PRT  
 <213> Homo sapiens

<400> 50

Val	His	Met	Pro	Thr	Lys	Ala	Val	Asp	Pro	Glu	Ala	Phe	Met	Asn	Ile
1				5					10					15	
Ser	Glu	Ile	Ile	Gln	His	Gln	Gly	Tyr	Pro	Cys	Glu	Glu	Tyr	Glu	Val
			20					25					30		
Ala	Thr	Glu	Asp	Gly	Tyr	Ile	Leu	Ser	Val	Asn	Arg	Ile	Pro	Arg	Gly
		35					40					45			
Leu	Val	Gln	Pro	Lys	Lys	Thr	Gly	Ser	Arg	Pro	Val	Val	Leu	Leu	Gln
	50					55					60				
His	Gly	Leu	Val	Gly	Gly	Ala	Ser	Asn	Trp	Ile	Ser	Asn	Leu	Pro	Asn
65					70					75				80	
Asn	Ser	Leu	Gly	Phe	Ile	Leu	Ala	Asp	Ala	Gly	Phe	Asp	Val	Trp	Met
				85					90					95	
Gly	Asn	Ser	Arg	Gly	Asn	Ala	Trp	Ser	Arg	Lys	His	Lys	Thr	Leu	Ser
			100					105					110		
Ile	Asp	Gln	Asp	Glu	Phe	Trp	Ala	Phe	Ser	Tyr	Asp	Glu	Met	Ala	Arg
		115					120					125			
Phe	Asp	Leu	Pro	Ala	Val	Ile	Asn	Phe	Ile	Leu	Gln	Lys	Thr	Gly	Gln
	130					135					140				
Glu	Lys	Ile	Tyr	Tyr	Val	Gly	Tyr	Ser	Gln	Gly	Thr	Thr	Met	Gly	Phe
145					150					155				160	
Ile	Ala	Phe	Ser	Thr	Met	Pro	Glu	Leu	Ala	Gln	Lys	Ile	Lys	Met	Tyr
				165					170					175	
Phe	Ala	Leu	Ala	Pro	Ile	Ala	Thr	Val	Lys	His	Ala	Lys	Ser	Pro	Gly
		180						185					190		
Thr	Lys	Phe	Leu	Leu	Leu	Pro	Asp	Met	Met	Ile	Lys	Gly	Leu	Phe	Gly
		195				200						205			
Lys	Lys	Glu	Phe	Leu	Tyr	Gln	Thr	Arg	Phe	Leu	Arg	Gln			
	210					215					220				

004250-050350

<210> 51  
 <211> 25  
 <212> PRT  
 <213> Homo sapiens

<400> 51  
 Leu Val Ile Tyr Leu Cys Gly Gln Val Ile Leu Asp Gln Ile Cys Ser  
 1 5 10 15

Asn Ile Met Leu Leu Leu Gly Gly Phe  
 20 25

<210> 52  
 <211> 144  
 <212> PRT  
 <213> Homo sapiens

<400> 52  
 Asn Thr Asn Asn Met Asn Met Ser Arg Ala Ser Val Tyr Ala Ala His  
 1 5 10 15

Thr Leu Ala Gly Thr Ser Val Gln Asn Ile Leu His Trp Ser Gln Ala  
 20 25 30

Val Asn Ser Gly Glu Leu Arg Ala Phe Asp Trp Gly Ser Glu Thr Lys  
 35 40 45

Asn Leu Glu Lys Cys Asn Gln Pro Thr Pro Val Arg Tyr Arg Val Arg  
 50 55 60

Asp Met Thr Val Pro Thr Ala Met Trp Thr Gly Gly Gln Asp Trp Leu  
 65 70 75 80

Ser Asn Pro Glu Asp Val Lys Met Leu Leu Ser Glu Val Thr Asn Leu  
 85 90 95

Ile Tyr His Lys Asn Ile Pro Glu Trp Ala His Val Asp Phe Ile Trp  
 100 105 110

Gly Leu Asp Ala Pro His Arg Met Tyr Asn Glu Ile Ile His Leu Met  
 115 120 125

Gln Gln Glu Glu Thr Asn Leu Ser Gln Gly Arg Cys Glu Ala Val Leu  
 130 135 140

00578063.052400

<210> 53  
 <211> 2133  
 <212> DNA  
 <213> Homo sapiens

<400> 53

```

gtcgacccac gcggtccacgg cgaggggctcc cgggggcgag cattgcccc cctgcaccac 60
ctcaccaaga tggctacttt gggacacaca ttccccttct atgctggccc caagccaacc 120
ttcccgatgg acaccacttt ggccagcatc atcatgatct ttctgactgc actggccacg 180
ttcatcgtca tcctgcctgg cattcgggga aagacgaggc tgttctggct gcttcgggtg 240
gtgaccagct tattcatcgg ggctgcaatc ctggctgtga atttcagttc tgagtgggtc 300
gtggggcagg tcagaccaa cacatcatac aaggccttca gttctgagtg gatcagcgt 360
gatattgggc tgcaggctcg gctgggtgga gtcaacatca cactcacagg gacccccgtg 420
cagcagctga atgagacat caattacaac gaggagttca cctggcgctt gggtgagaac 480
tatgctgagg agtggtgcaa ggctctggag aaggggctgc cagaccctgt gttgtacct 540
gttgagaagt tcactccaag aagcccatgt ggcctatacc gccagtaccg cctggcgagg 600
cactacacct cagccatgct atgggtggca ttctctgctt ggctgctggc caatgtgatg 660
ctctccatgc ctgtgctggg atatgggtgg tacatgctat tggccacggg catcttccag 720
ctgttggctc tgctcttctt ctccatggcc acatcactca cctcaccctg tcccctgcac 780
ctgggcgctt ctgtgctgca tactcaccat gggcctgcct tctggatcac attgaccaca 840
ggactgctgt gtgtgctgct gggcctggct atggcggtgg ccacaggat gcagcctcac 900
aggctgaagg ctttcttcaa ccagagtgtg gatgaagacc ccatgctgga gtggagtcct 960
gaggaagggt gactcctgag ccccgcctac cgggtccatg ctgacagtcc caagtcccag 1020
gacattcccc tgtcagaggc ttctccacc aaggcatact gtaaggaggc acaccccaa 1080
gatcctgatt gtgctttata acattcctcc ccgtggaggc cacctggact tccagtctgg 1140
ctccaaacct cattggcgcc ccataaaacc agcagaactg ccctcagggt ggctgttacc 1200
agacaccag caccaatcta cagacggagt agaaaaagga ggctctatat actgatgtta 1260
aaaaacaaaa caaaacaaaa agccctaagg gactgaagag atgctgggcc tgtccataaa 1320
gcctgttgcc atgataaggc caagcagggg ctagcttata tgcacagcaa ccagccttt 1380
ccgtgctgcc ttgcctcttc aagatgctat tcactgaaac ctaacttcac ccccataaca 1440
ccagcagggt ggggggttaca tatgattctc ctatggtttc ctctcatccc tcggcacctc 1500
ttgttttctt ttttcttggg ttctttttgt tcttcttta ctctccagc ttgtgtggcc 1560
ttttgttaca atgaaagaca gactggaaa ggaggggaaa ccaaacttct catcctaggt 1620
ctaacattaa ccaactatgc cacattctct ttgagcttca gttcccaaat ttgctacata 1680
agattgcaag acttgccaag aatcttggga tttatctttc tatgccttgc tgacacctac 1740
cttggccctc aaacaccacc tcacaagaag ccaggtggga agttaggga tcaactcaa 1800
aacgctattc cttcccacc cactcagctg ggctagctga gtggcatcca ggacggggga 1860
gtgggtgacc tgccatcatca ctgccaccta acgtccccct ggggtggttc agaaagatgc 1920
tagctctggt aggggtccctc cggcctcact agagggcgcc cctattactc tggagtcgac 1980
gcagagaatc aggtttcaca gactgcgga gagtgtacta ggctgtctcc agcccagcga 2040
agctcatgag gacgtgcgac cccggcgcg agaaagccatg aaaaattaatg ggaaaaaacag 2100
tttttaaaaa aaaaaaaaaa aaagggcggc cgc 2133

```

<210> 54

<211> 1029

<212> DNA

<213> Homo sapiens

<400> 54

```
atggctactt tgggacacac attccccctt tatgctggcc ccaagccaac cttcccgatg 60
gacaccactt tggccagcat catcatgata tttctgactg cactggccac gttcatcgtc 120
atcctgcctg gcattcgggg aaagacgagg ctgttctggc tgcttcgggt ggtgaccagc 180
ttattcatcg gggctgcaat cctggctgtg aatttcagtt ctgagtggtc tgtgggccag 240
gtcagacca acacatcata caaggccttc agttctgagt ggatcagcg tgatattggg 300
ctgcaggctg ggtgggtgg agtcaacatc aactcacag ggacccccgt gcagcagctg 360
aatgagacca tcaattacaa cgaggagttc acctggcgcc tgggtgagaa ctatgctgag 420
gagtgtgcaa aggctctgga gaaggggctg ccagaccctg tgtgttacct agctgagaag 480
ttcactccaa gaagcccatg tggcctatac cgccagtacc gcctggcggg aactacacc 540
tcagccatgc tatgggtggc attcctctgc tggctgctgg ccaatgtgat gctctccatg 600
cctgtgctgg tatatggtgg ctacatgcta ttggccacgg gcattctcca gctgttggct 660
ctgctcttct tctccatggc cacatcactc acctcaccct gtcccctgca cctgggcgct 720
tctgtgctgc atactacca tgggcctgcc ttctggatca cattgaccac aggactgctg 780
tgtgtgctgc tgggcctggc tatggcggtg gccacagga tgcagcctca caggctgaag 840
gctttcttca accagagtgt ggatgaagac cccatgctgg agtggagtcc tgaggaaggt 900
ggactcctga gccccgcta ccggtccatg gctgacagtc ccaagtccca ggacattccc 960
ctgtcagagg cttcctccac caaggcatac tgtaaggagg cacaccccaa agatcctgat 1020
tgtgcttta                                     1029
```

<210> 55

<211> 343

<212> PRT

<213> Homo sapiens

<400> 55

```
Met Ala Thr Leu Gly His Thr Phe Pro Phe Tyr Ala Gly Pro Lys Pro
  1                      5                      10                     15

Thr Phe Pro Met Asp Thr Thr Leu Ala Ser Ile Ile Met Ile Phe Leu
      20                      25                     30

Thr Ala Leu Ala Thr Phe Ile Val Ile Leu Pro Gly Ile Arg Gly Lys
      35                      40                     45

Thr Arg Leu Phe Trp Leu Leu Arg Val Val Thr Ser Leu Phe Ile Gly
      50                      55                     60

Ala Ala Ile Leu Ala Val Asn Phe Ser Ser Glu Trp Ser Val Gly Gln
      65                      70                     75                     80

Val Ser Thr Asn Thr Ser Tyr Lys Ala Phe Ser Ser Glu Trp Ile Ser
      85                      90                     95
```



004250-29037500

Ala	Asp	Ile	Gly	Leu	Gln	Val	Gly	Leu	Gly	Gly	Val	Asn	Ile	Thr	Leu	100	105	110
Thr	Gly	Thr	Pro	Val	Gln	Gln	Leu	Asn	Glu	Thr	Ile	Asn	Tyr	Asn	Glu	115	120	125
Glu	Phe	Thr	Trp	Arg	Leu	Gly	Glu	Asn	Tyr	Ala	Glu	Glu	Cys	Ala	Lys	130	135	140
Ala	Leu	Glu	Lys	Gly	Leu	Pro	Asp	Pro	Val	Leu	Tyr	Leu	Ala	Glu	Lys	145	150	155
Phe	Thr	Pro	Arg	Ser	Pro	Cys	Gly	Leu	Tyr	Arg	Gln	Tyr	Arg	Leu	Ala	165	170	175
Gly	His	Tyr	Thr	Ser	Ala	Met	Leu	Trp	Val	Ala	Phe	Leu	Cys	Trp	Leu	180	185	190
Leu	Ala	Asn	Val	Met	Leu	Ser	Met	Pro	Val	Leu	Val	Tyr	Gly	Gly	Tyr	195	200	205
Met	Leu	Leu	Ala	Thr	Gly	Ile	Phe	Gln	Leu	Leu	Ala	Leu	Leu	Phe	Phe	210	215	220
Ser	Met	Ala	Thr	Ser	Leu	Thr	Ser	Pro	Cys	Pro	Leu	His	Leu	Gly	Ala	225	230	235
Ser	Val	Leu	His	Thr	His	His	Gly	Pro	Ala	Phe	Trp	Ile	Thr	Leu	Thr	245	250	255
Thr	Gly	Leu	Leu	Cys	Val	Leu	Leu	Gly	Leu	Ala	Met	Ala	Val	Ala	His	260	265	270
Arg	Met	Gln	Pro	His	Arg	Leu	Lys	Ala	Phe	Phe	Asn	Gln	Ser	Val	Asp	275	280	285
Glu	Asp	Pro	Met	Leu	Glu	Trp	Ser	Pro	Glu	Glu	Gly	Gly	Leu	Leu	Ser	290	295	300
Pro	Arg	Tyr	Arg	Ser	Met	Ala	Asp	Ser	Pro	Lys	Ser	Gln	Asp	Ile	Pro	305	310	315
Leu	Ser	Glu	Ala	Ser	Ser	Thr	Lys	Ala	Tyr	Cys	Lys	Glu	Ala	His	Pro	325	330	335
Lys	Asp	Pro	Asp	Cys	Ala	Leu										340		

<210> 56  
 <211> 23  
 <212> PRT  
 <213> Homo sapiens

<400> 56  
 Met Ala Thr Leu Gly His Thr Phe Pro Phe Tyr Ala Gly Pro Lys Pro  
           1                  5                  10                  15  
 Thr Phe Pro Met Asp Thr Thr  
                   20

<210> 57  
 <211> 112  
 <212> PRT  
 <213> Homo sapiens

<400> 57  
 Asn Phe Ser Ser Glu Trp Ser Val Gly Gln Val Ser Thr Asn Thr Ser  
           1                  5                  10                  15  
 Tyr Lys Ala Phe Ser Ser Glu Trp Ile Ser Ala Asp Ile Gly Leu Gln  
                   20                  25                  30  
 Val Gly Leu Gly Gly Val Asn Ile Thr Leu Thr Gly Thr Pro Val Gln  
                   35                  40                  45  
 Gln Leu Asn Glu Thr Ile Asn Tyr Asn Glu Glu Phe Thr Trp Arg Leu  
           50                  55                  60  
 Gly Glu Asn Tyr Ala Glu Glu Cys Ala Lys Ala Leu Glu Lys Gly Leu  
           65                  70                  75                  80  
 Pro Asp Pro Val Leu Tyr Leu Ala Glu Lys Phe Thr Pro Arg Ser Pro  
                   85                  90                  95  
 Cys Gly Leu Tyr Arg Gln Tyr Arg Leu Ala Gly His Tyr Thr Ser Ala  
           100                  105                  110

<210> 58  
 <211> 22

004250" E9087560

<212> PRT

<213> Homo sapiens

<400> 58

Thr Ser Leu Thr Ser Pro Cys Pro Leu His Leu Gly Ala Ser Val Leu  
1 5 10 15

His Thr His His Gly Pro  
20

<210> 59

<211> 19

<212> PRT

<213> Homo sapiens

<400> 59

Leu Ala Ser Ile Ile Met Ile Phe Leu Thr Ala Leu Ala Thr Phe Ile  
1 5 10 15

Val Ile Leu

<210> 60

<211> 20

<212> PRT

<213> Homo sapiens

<400> 60

Leu Phe Trp Leu Leu Arg Val Val Thr Ser Leu Phe Ile Gly Ala Ala  
1 5 10 15

Ile Leu Ala Val  
20

<210> 61

<211> 22

<212> PRT

<213> Homo sapiens

<400> 61

Met Leu Trp Val Ala Phe Leu Cys Trp Leu Leu Ala Asn Val Met Leu  
1 5 10 15

Ser Met Pro Val Leu Val  
20

004250-159084560

<210> 62  
 <211> 17  
 <212> PRT  
 <213> Homo sapiens

<400> 62  
 Leu Ala Thr Gly Ile Phe Gln Leu Leu Ala Leu Leu Phe Phe Ser Met  
 1 5 10 15

Ala

<210> 63  
 <211> 22  
 <212> PRT  
 <213> Homo sapiens

<400> 63  
 Ala Phe Trp Ile Thr Leu Thr Thr Gly Leu Leu Cys Val Leu Leu Gly  
 1 5 10 15

Leu Ala Met Ala Val Ala  
 20

<210> 64  
 <211> 8  
 <212> PRT  
 <213> Homo sapiens

<400> 64  
 Pro Gly Ile Arg Gly Lys Thr Arg  
 1 5

<210> 65  
 <211> 6  
 <212> PRT  
 <213> Homo sapiens

<400> 65  
 Tyr Gly Gly Tyr Met Leu  
 1 5

004250 "E9087560

<210> 66  
 <211> 72  
 <212> PRT  
 <213> Homo sapiens

<400> 66  
 His Arg Met Gln Pro His Arg Leu Lys Ala Phe Phe Asn Gln Ser Val  
 1 5 10 15  
 Asp Glu Asp Pro Met Leu Glu Trp Ser Pro Glu Glu Gly Gly Leu Leu  
 20 25 30  
 Ser Pro Arg Tyr Arg Ser Met Ala Asp Ser Pro Lys Ser Gln Asp Ile  
 35 40 45  
 Pro Leu Ser Glu Ala Ser Ser Thr Lys Ala Tyr Cys Lys Glu Ala His  
 50 55 60  
 Pro Lys Asp Pro Asp Cys Ala Leu  
 65 70

<210> 67  
 <211> 4928  
 <212> DNA  
 <213> Mus sp.

<400> 67  
 gtcgacccac gcgtccgccc ggctcccggg gctgccccct ctgccccggg ccgcgccccg 60  
 ggggtcccgc ctgacggccc atggcgccgc ccgcccggcg tctcgcgctg ctctccgccc 120  
 ctgcgctcac tctggcggcc cggcccgcgc ccggtccccg ctccggcccc gagtgcttca 180  
 cagccaacgg tgcagattac aggggaacac agagctggac agcgcgtgcaa ggtgggaagc 240  
 catgtctgtt ctggaacgag actttccagc atccgtacaa cacgctgaag taccccaacg 300  
 ggggaaggagg actgggcgag cacaattatt gcagaaatcc agatggagac gtgagccctt 360  
 ggtgctacgt ggccgagcat gaggacggag tctactggaa gtactgtgaa attcctgcct 420  
 gccagatgcc tggaaacctt ggctgctaca aggatcatgg aaaccacac cctctcacgg 480  
 gcaccagtaa aacctctaac aagctcacca taaaaacctg tatcagcttc tgtcggagtc 540  
 agagattcaa gtttgctggg atggagtcag gctatgcctg cttctgtggg aacaatcctg 600  
 actactggaa gcacggggag gcggccagca ccgagtgcaa tagtgtctgc ttcggggacc 660  
 acacgcagcc ctgcggtggg gacggcagga ttatcctctt tgacactctc gtggggcgct 720  
 gcggtgggaa ctactcagcc atggcagccg tgggtgactc ccctgacttc cctgacacct 780  
 acgccactgg cagagtctgc tactggacca tccgggttcc aggagcctct cgcattccatt 840  
 tcaacttcac cctgtttgat atcagggact ctgcagacat ggtggagctg ctggacggct 900  
 acaccacccg cgtcctggtc cggtcagtg ggaggagccg cccgcctctg tctttcaatg 960  
 tctctctgga ttttgtcatt ttgtatttct tctctgatcg catcaatcag gcccagggat 1020  
 ttgctgtgtt gtaccaagcc accaaggagg aaccgccaca ggagagacct gctgtcaacc 1080  
 agaccctggc agaggtgatc accgagcaag ccaacctcag tgtcagcgct gccactcct 1140  
 ccaaagtcct ctatgtcatc acccccagcc ccagccaccc tccgcagact gcccaggtag 1200

```

ccattcctgg gcaccgtcag ttggggccaa cagccacaga gtggaaggat ggactgtgta 1260
cggcctggcg accctcctca tcctcacagt cacagcagtt gtcgcaaaga ttcttctgca 1320
tgtcacattt aaatctcatc gagtccttgc atcaggagac cttagggact gtcgtcagcc 1380
tggggcttct ggagatatct ggaccatttt ctatgaacct tccactacaa tctccatctt 1440
taagaagaag ctcaaggggtc agagtcaaca agatgaccgc aatcccctcg tgagtgactg 1500
aagcccacgc ctgcatgaga ggctccgctc caagctcgag tttgctcccc tgagttctcc 1560
tctgatgagt tcctgcctt cccattcacc accatctctt ttgggagcac cctgctttag 1620
aggcagccca gcctgggatc ctccatcaca tgtaccagcc tggctgctct gctggggatg 1680
gtaagacagg ccagggctga caggacacag ctggacctga ctccagaaga ctcttgggtg 1740
gtggggaggt atagtgtagg atgagttttc ttgcttcttc tctgttttgt ccacatacag 1800
atcggtttcc cctgtcttta cagtttgcaa tagagccaga ctgaaagaac tgtcaggttt 1860
tctaggctgg cctggttccc cactaagagt ggcattggcg ccctagaggc ccagaggccc 1920
agtgtaggct tggagctttc tctgctgcc aactacatgt gtcactagt ccgaggggac 1980
tgagagcagg gccacaccag atgtcatctt tctagagggt tctttttagt acccactgac 2040
caatggggca agcctgagga ttggtccatc tgtttgcca tggaacagac acagtgaact 2100
tcctggatac tagacttaac tagcctagcc ctcaagtagt tgccaatcct gtggaatcag 2160
aattcagcct gtcttctgt cctcagccca agcctgtagc ctagagctgg ggctgtagcc 2220
tagagctggg gctgtagcct agagctgggg ctgtagcaca gagctggggc tgtagcctag 2280
agctggggct gtagcacaga gctggggctg tagcctagag ctggggctgt agcacagagc 2340
tggggctgta gcacagagct ggggctgtag cctagagctg gggctgtagc acagagctgg 2400
ggctgtaact cagcgatcaa gagcttgctt tgtatacatc ggaccctagg ttctatccca 2460
gcactatcag aagggtgggag agaaaaagac tgcaccatag catgcgggca gcatctgtgg 2520
ttcctacgtg aggtgtcatc attttaaaag cagatcaaaa ctaccgagag ttttgcctt 2580
tgtcccttat catgggagca gagtaggagt aagggtctgt gtcttgtctca ttgtcccca 2640
gacagggagg caggaaggag tcaggcttgg gaactggaga tcctcccagg aaaagctgca 2700
agattgagag acccagctgc agttgggaga ggaaggcca tccccgactg agaagtcctg 2760
cagtctggaa gtggcctttg tcagcagcag ctgtgcctg aaggtagacc ttggtcactc 2820
tcctgccagc ccttgagcct ctgctctcct ggtaccctc ctggaacacc atgctaacct 2880
tccccgagtc tctcagtcac tgccattgag gcctctcctc tagctgctgc tccccaggac 2940
tgtctggggc catctgggga tcagggagag gcagcaggag tactgacgag gcagtgcact 3000
gagctgatga gtcaaccaga ggacaccaga gtctacagtg ggctggctgc tggctcagct 3060
cctatgggag gcctacagg gtactaagct aggggtcat catctcattt gatctgggaa 3120
aggctacagg ctctggatg tgaagacagg cccactacat aagaagacca ctggaaatag 3180
actgacagga gcaggttcca ctctaggctg tccatagcgt ttgcaggact cccctgagac 3240
caagtgttga gtcacagagt gccatgtgcg tagtgcataa aggatatggg ttcttaacca 3300
gggaaggctc atagcaggcc aggacatttt ttcagctcag agcactggcc ccaggcttcc 3360
tctaagccac cactcacctg tctcttccca tctcgacac aggaagcaag cccagtggtg 3420
gtggcagctg cggctcagca ttggtgtccc cagggaaggc ggtggatgtg cccacgctcc 3480
ttttgctgtg ggctggcac agcccaacac tgcagggcc accttctctc ttggggggta 3540
gggacacata aggaaaacta acccacctcc aacaacagca gaggacagtg ggaagggaag 3600
gctgtaaaac acccaggcca gacctccaga aatgacaggc acagtctgtt agaacctgta 3660
ggcagccagt cacagagggc ctttgtgctg gtaacaccct gcctggagca taggggtaag 3720
ccgagggaga agagcagccc tcagagacat cagctaaaaa cataggtgcc ctatgtccct 3780
cccttcctgt cactctgtt acaaagcaga gacagagtag gaaagaggtc ttcactctct 3840
cccacatcag caaggatagg gctgcggctg cctaaagtga gcaaggagaa cagagctctg 3900
gacttctcta aatgtgggct ctggcttcag actcctcagc caaaagctct tgaagatcaa 3960
agctctggcg ggtacagctg tcctggcctg tgggccagcc catgggatgt gcctgggcca 4020
ggtgccacc cagggctcac tgtcatccca ggagggaccc cacctgatgc tcctcatcat 4080

```

```

ccgctggcct gacactatca gagctcgcgc cggctgttgc cagggacaga ctgactacac 4140
ttgaccttca agagcactta gaagtggatg gcctccagac tctgtcagcc tctgcagggg 4200
ccacacaagt ctcccagacc aagtcacaa gcctccatgg ttccctggct cctctcctgt 4260
ggagtgtcct gtttgatgtc tgaggtctgc tttgggtacc gccctgggaa ctgctaacct 4320
ccgattggtc cctttgtgtc tctgtttact gtcctcttct acctccaggt cacttagctc 4380
tggctgctct ggctgggagt ggggggtggg gatgctggct gcacccccac cctgggtctgc 4440
caacagaacc tgggggcctc acacgggctc ctgtcttgcc aagctggagc tgagcacact 4500
ggcccaggct gagtggggca gagcaaaca gtggaagggg atctctctcc ttagagggag 4560
gtggccgaag gtgtagatcc agcgaggagg ctgccatccc cgccaccttc atagcagcaa 4620
gaccttccca tttccaatct caccctccag cagggatatg actttggaca acaaggcttt 4680
atgtgtaaat atgctcttaa tatgcaactt tgagaataag atagaaacat catgtatttt 4740
aaaatataaa atgaagtgtg acacactgta tacaatttaa tatatatatt taggattttg 4800
ttattttaaga aatggaatg tgatgggtact taacttttac aaaagagaga aaatgttatt 4860
tttactgttt gaagaaaata aatattctca ttgtttaga aaaaaaaaaa aaaaaaaagg 4920
gcggccgc                                     4928

```

<210> 68

<211> 1410

<212> DNA

<213> Mus sp.

<400> 68

```

atggcgccgc ccgcccgcgc tctcgcgctg ctctccgcgc ctgcgctcac tctggcgggc 60
cggcccgccg ccggtccccg ctccggcccc gagtgcttca cagccaacgg tgcagattac 120
aggggaacac agagctggac agcgctgcaa ggtgggaagc catgtctgtt ctggaacgag 180
actttccagc atccgtacaa cacgctgaag taccccaacg gggaaggagg actgggcgag 240
cacaattatt gcagaaatcc agatggagac gtgagccctt ggtgctacgt ggccgagcat 300
gaggacggag tctactggaa gtactgtgaa attcctgcct gccagatgcc tggaaacctt 360
ggctgctaca aggatcatgg aaaccacact cctctcacgg gcaccagtaa aacctctaac 420
aagctcacca taaaacctg tatcagcttc tgcggagtc agagattcaa gtttgctggg 480
atggagtcag gctatgcctg cttctgtggg aacaatcctg actactggaa gcacggggag 540
gcggccagca ccgagtgcaa tagtgtctgc ttccggggacc acacgcagcc ctgcggtggg 600
gacggcagga ttatcctctt tgacactctc gtgggcgcct gcggtgggaa ctactcagcc 660
atggcagccg tgggtgtact ccctgacttc cctgacacct acgccactgg cagagtctgc 720
tactggacca tccgggttcc aggagcctct cgcattccatt tcaacttcac cctgtttgat 780
atcagggact ctgcagacat ggtggagctg ctggacggct acaccaccg cgtcctggtc 840
cggctcagtg ggaggagccg cccgcctctg tctttcaatg tctctctgga ttttgtcatt 900
ttgtatttct tctctgatcg catcaatcag gccagggat ttgctgtgtt gtaccaagcc 960
accaaggagg aaccgccaca ggagagacct gctgtcaacc agaccctggc agaggtgatc 1020
accgagcaag ccaacctcag tgtcagcgct gccactcct ccaaagtcct ctatgtcatc 1080
acccccagcc ccagccaccc tccgcagact gccaggtag ccattcctgg gcaccgtcag 1140
ttggggccaa cagccacaga gtggaaggat ggactgtgta cggcctggcg accctcctca 1200
tcctcacagt cacagcagtt gtcgaaaaga ttcttctgca tgtcacattt aaatctcatc 1260
gagtcctctg atcaggagac cttagggact gtcgtcagcc tggggcttct ggagatatct 1320
ggaccatttt ctatgaacct tccactacaa tctccatctt taagaagaag ctcaagggtc 1380
agagtcaaca agatgaccgc aatcccctcg                                     1410

```

<210> 69  
 <211> 470  
 <212> PRT  
 <213> Mus sp.

<400> 69

Met	Ala	Pro	Pro	Ala	Ala	Arg	Leu	Ala	Leu	Leu	Ser	Ala	Ala	Ala	Leu
1				5					10					15	
Thr	Leu	Ala	Ala	Arg	Pro	Ala	Pro	Gly	Pro	Arg	Ser	Gly	Pro	Glu	Cys
			20					25					30		
Phe	Thr	Ala	Asn	Gly	Ala	Asp	Tyr	Arg	Gly	Thr	Gln	Ser	Trp	Thr	Ala
		35					40					45			
Leu	Gln	Gly	Gly	Lys	Pro	Cys	Leu	Phe	Trp	Asn	Glu	Thr	Phe	Gln	His
	50					55					60				
Pro	Tyr	Asn	Thr	Leu	Lys	Tyr	Pro	Asn	Gly	Glu	Gly	Gly	Leu	Gly	Glu
65					70					75					80
His	Asn	Tyr	Cys	Arg	Asn	Pro	Asp	Gly	Asp	Val	Ser	Pro	Trp	Cys	Tyr
				85					90					95	
Val	Ala	Glu	His	Glu	Asp	Gly	Val	Tyr	Trp	Lys	Tyr	Cys	Glu	Ile	Pro
		100					105						110		
Ala	Cys	Gln	Met	Pro	Gly	Asn	Leu	Gly	Cys	Tyr	Lys	Asp	His	Gly	Asn
		115					120					125			
Pro	Pro	Pro	Leu	Thr	Gly	Thr	Ser	Lys	Thr	Ser	Asn	Lys	Leu	Thr	Ile
	130					135					140				
Gln	Thr	Cys	Ile	Ser	Phe	Cys	Arg	Ser	Gln	Arg	Phe	Lys	Phe	Ala	Gly
145					150					155					160
Met	Glu	Ser	Gly	Tyr	Ala	Cys	Phe	Cys	Gly	Asn	Asn	Pro	Asp	Tyr	Trp
				165					170					175	
Lys	His	Gly	Glu	Ala	Ala	Ser	Thr	Glu	Cys	Asn	Ser	Val	Cys	Phe	Gly
			180					185					190		
Asp	His	Thr	Gln	Pro	Cys	Gly	Gly	Asp	Gly	Arg	Ile	Ile	Leu	Phe	Asp
		195					200					205			
Thr	Leu	Val	Gly	Ala	Cys	Gly	Gly	Asn	Tyr	Ser	Ala	Met	Ala	Ala	Val
	210					215					220				

004250"E9087560



Val	Tyr	Ser	Pro	Asp	Phe	Pro	Asp	Thr	Tyr	Ala	Thr	Gly	Arg	Val	Cys	
225					230					235					240	
Tyr	Trp	Thr	Ile	Arg	Val	Pro	Gly	Ala	Ser	Arg	Ile	His	Phe	Asn	Phe	
			245						250					255		
Thr	Leu	Phe	Asp	Ile	Arg	Asp	Ser	Ala	Asp	Met	Val	Glu	Leu	Leu	Asp	
			260					265					270			
Gly	Tyr	Thr	His	Arg	Val	Leu	Val	Arg	Leu	Ser	Gly	Arg	Ser	Arg	Pro	
		275						280				285				
Pro	Leu	Ser	Phe	Asn	Val	Ser	Leu	Asp	Phe	Val	Ile	Leu	Tyr	Phe	Phe	
	290					295					300					
Ser	Asp	Arg	Ile	Asn	Gln	Ala	Gln	Gly	Phe	Ala	Val	Leu	Tyr	Gln	Ala	
305					310					315					320	
Thr	Lys	Glu	Glu	Pro	Pro	Gln	Glu	Arg	Pro	Ala	Val	Asn	Gln	Thr	Leu	
				325					330					335		
Ala	Glu	Val	Ile	Thr	Glu	Gln	Ala	Asn	Leu	Ser	Val	Ser	Ala	Ala	His	
			340					345					350			
Ser	Ser	Lys	Val	Leu	Tyr	Val	Ile	Thr	Pro	Ser	Pro	Ser	His	Pro	Pro	
		355					360					365				
Gln	Thr	Ala	Gln	Val	Ala	Ile	Pro	Gly	His	Arg	Gln	Leu	Gly	Pro	Thr	
	370					375					380					
Ala	Thr	Glu	Trp	Lys	Asp	Gly	Leu	Cys	Thr	Ala	Trp	Arg	Pro	Ser	Ser	
385					390					395					400	
Ser	Ser	Gln	Ser	Gln	Gln	Leu	Ser	Gln	Arg	Phe	Phe	Cys	Met	Ser	His	
			405						410					415		
Leu	Asn	Leu	Ile	Glu	Ser	Leu	His	Gln	Glu	Thr	Leu	Gly	Thr	Val	Val	
			420					425					430			
Ser	Leu	Gly	Leu	Leu	Glu	Ile	Ser	Gly	Pro	Phe	Ser	Met	Asn	Leu	Pro	
		435					440					445				
Leu	Gln	Ser	Pro	Ser	Leu	Arg	Arg	Ser	Ser	Arg	Val	Arg	Val	Asn	Lys	
	450					455					460					
Met	Thr	Ala	Ile	Pro	Ser											
465					470											

<210> 70  
 <211> 760  
 <212> PRT  
 <213> Mus sp.

<400> 70

Met	Ala	Leu	Pro	Ser	Leu	Gly	Gln	Asp	Ser	Trp	Ser	Leu	Leu	Arg	Val
1				5					10					15	
Phe	Phe	Phe	Gln	Leu	Phe	Leu	Leu	Pro	Ser	Leu	Pro	Pro	Ala	Ser	Gly
			20					25					30		
Thr	Gly	Gly	Gln	Gly	Pro	Met	Pro	Arg	Val	Lys	Tyr	His	Ala	Gly	Asp
			35				40					45			
Gly	His	Arg	Ala	Leu	Ser	Phe	Phe	Gln	Gln	Lys	Gly	Leu	Arg	Asp	Phe
	50					55					60				
Asp	Thr	Leu	Leu	Leu	Ser	Asp	Asp	Gly	Asn	Thr	Leu	Tyr	Val	Gly	Ala
65					70					75					80
Arg	Glu	Thr	Val	Leu	Ala	Leu	Asn	Ile	Gln	Asn	Pro	Gly	Ile	Pro	Arg
				85					90					95	
Leu	Lys	Asn	Met	Ile	Pro	Trp	Pro	Ala	Ser	Glu	Arg	Lys	Lys	Thr	Glu
			100					105					110		
Cys	Ala	Phe	Lys	Lys	Lys	Ser	Asn	Glu	Thr	Gln	Cys	Phe	Asn	Phe	Ile
	115						120					125			
Arg	Val	Leu	Val	Ser	Tyr	Asn	Ala	Thr	His	Leu	Tyr	Ala	Cys	Gly	Thr
	130					135					140				
Phe	Ala	Phe	Ser	Pro	Ala	Cys	Thr	Phe	Ile	Glu	Leu	Gln	Asp	Ser	Leu
145					150					155					160
Leu	Leu	Pro	Ile	Leu	Ile	Asp	Lys	Val	Met	Asp	Gly	Lys	Gly	Gln	Ser
				165					170					175	
Pro	Leu	Thr	Leu	Phe	Thr	Ser	Thr	Gln	Ala	Val	Leu	Val	Asp	Gly	Met
			180					185					190		
Leu	Tyr	Ser	Gly	Thr	Met	Asn	Asn	Phe	Leu	Gly	Ser	Glu	Pro	Ile	Leu
	195					200					205				
Met	Arg	Thr	Leu	Gly	Ser	His	Pro	Val	Leu	Lys	Thr	Asp	Ile	Phe	Leu

004250" E9082560

004250" 29084560

210		215		220
Arg Trp Leu His Ala Asp Ala Ser Phe Val Ala Ala Ile Pro Ser Thr				
225		230		235 240
Gln Val Val Tyr Phe Phe Phe Glu Glu Thr Ala Ser Glu Phe Asp Phe				
	245		250	255
Phe Glu Glu Leu Tyr Ile Ser Arg Val Ala Gln Val Cys Lys Asn Asp				
	260		265	270
Val Gly Gly Glu Lys Leu Leu Gln Lys Lys Trp Thr Thr Phe Leu Lys				
	275		280	285
Ala Gln Leu Leu Cys Ala Gln Pro Gly Gln Leu Pro Phe Asn Ile Ile				
	290		295	300
Arg His Ala Val Leu Leu Pro Ala Asp Ser Pro Ser Val Ser Arg Ile				
305		310		315 320
Tyr Ala Val Phe Thr Ser Gln Trp Gln Val Gly Gly Thr Arg Ser Ser				
	325		330	335
Ala Val Cys Ala Phe Ser Leu Thr Asp Ile Glu Arg Val Phe Lys Gly				
	340		345	350
Lys Tyr Lys Glu Leu Asn Lys Glu Thr Ser Arg Trp Thr Thr Tyr Arg				
	355		360	365
Gly Ser Glu Val Ser Pro Arg Pro Gly Ser Cys Ser Met Gly Pro Ser				
	370		375	380
Ser Asp Lys Ala Leu Thr Phe Met Lys Asp His Phe Leu Met Asp Glu				
385		390		395 400
His Val Val Gly Thr Pro Leu Leu Val Lys Ser Gly Val Glu Tyr Thr				
	405		410	415
Arg Leu Ala Val Glu Ser Ala Arg Gly Leu Asp Gly Ser Ser His Val				
	420		425	430
Val Met Tyr Leu Gly Thr Ser Thr Gly Pro Leu His Lys Ala Val Val				
	435		440	445
Pro Gln Asp Ser Ser Ala Tyr Leu Val Glu Glu Ile Gln Leu Ser Pro				
	450		455	460
Asp Ser Glu Pro Val Arg Asn Leu Gln Leu Ala Pro Ala Gln Gly Ala				

001250" E9032560

465		470		475		480
Val Phe Ala Gly Phe Ser Gly Gly Ile Trp Arg Val Pro Arg Ala Asn						
	485			490		495
Cys Ser Val Tyr Glu Ser Cys Val Asp Cys Val Leu Ala Arg Asp Pro						
	500			505		510
His Cys Ala Trp Asp Pro Glu Ser Arg Leu Cys Ser Leu Leu Ser Gly						
	515			520		525
Ser Thr Lys Pro Trp Lys Gln Asp Met Glu Arg Gly Asn Pro Glu Trp						
	530			535		540
Val Cys Thr Arg Gly Pro Met Ala Arg Ser Pro Arg Arg Gln Ser Pro						
	545			550		555
						560
Pro Gln Leu Ile Lys Glu Val Leu Thr Val Pro Asn Ser Ile Leu Glu						
				565		570
						575
Leu Arg Cys Pro His Leu Ser Ala Leu Ala Ser Tyr His Trp Ser His						
	580			585		590
Gly Arg Ala Lys Ile Ser Glu Ala Ser Ala Thr Val Tyr Asn Gly Ser						
	595			600		605
Leu Leu Leu Leu Pro Gln Asp Gly Val Gly Gly Leu Tyr Gln Cys Val						
	610			615		620
Ala Thr Glu Asn Gly Tyr Ser Tyr Pro Val Val Ser Tyr Trp Val Asp						
	625			630		635
						640
Ser Gln Asp Gln Pro Leu Ala Leu Asp Pro Glu Leu Ala Gly Val Pro						
				645		650
						655
Arg Glu Arg Val Gln Val Pro Leu Thr Arg Val Gly Gly Gly Ala Ser						
	660			665		670
Met Ala Ala Gln Arg Ser Tyr Trp Pro His Phe Leu Ile Val Thr Val						
	675			680		685
Leu Leu Ala Ile Val Leu Leu Gly Val Leu Thr Leu Leu Leu Ala Ser						
	690			695		700
Pro Leu Gly Ala Leu Arg Ala Arg Gly Lys Val Gln Gly Cys Gly Met						
	705			710		715
						720
Leu Pro Pro Arg Glu Lys Ala Pro Leu Ser Arg Asp Gln His Leu Gln						

725

730

735

Pro Ser Lys Asp His Arg Thr Ser Ala Ser Asp Val Asp Ala Asp Asn

740

745

750

Asn His Leu Gly Ala Glu Val Ala

755

760

&lt;210&gt; 71

&lt;211&gt; 3046

&lt;212&gt; DNA

&lt;213&gt; Mus sp.

&lt;400&gt; 71

ctcggacgcc tgggttaggg gtctgtactg ctggggaacc atctggtgac catctcaggc 60  
tgaccatggc cctaccatcc ctgggccagg actcatggag tctcctgcgt gtttttttct 120  
tccaactctt cctgctgcca tcaactgccac ctgcttctgg gactggtggt caggggcccc 180  
tgcccagagt caaataccat gctggagacg ggacacagggc cctcagcttc ttccaacaaa 240  
aaggcctccg agactttgac acgctgctcc tgagtgcga tggcaacact ctctatgtgg 300  
gggctcgaga gaccgtcctg gccttgaata tccagaaccc aggaatccca aggctaaaga 360  
acatgatacc ctggccagcc agtgagagaa aaaagaccga atgtgccttt aagaagaaga 420  
gcaatgagac acagtgtttc aacttcattc gagtcctggt ctcttacaat gctactcacc 480  
tctatgcttg tgggaccttt gccttcagcc ctgcctgtac cttcattgaa ctccaagatt 540  
ccctcctggt gcccatcttg atagacaagg tcatggacgg gaagggccaa agccctttga 600  
ccctgttcac aagcacacaa gctgtcttgg tcgatgggat gctttattcc ggaccatga 660  
acaacttcct gggcagcgag cccatcctga tgcggacact gggatcccat cctgttctca 720  
agactgacat cttcttacgc tggctgcacg cgatgcctc cttcgtggca gccattccat 780  
ccaccaggt cgtctatttc ttctttgagg agacagccag cgagtgtgac ttctttgaag 840  
agctgtatat atccagggtg gctcaagtct gcaagaacga cgtgggcggt gaaaagctgc 900  
tgagaagaa gtggaaccac ttctctaaag ccagttgct ctgcgctcag ccagggcagc 960  
tgccattcaa catcatccgc cacgcggtcc tgctgcccgc cgattctccc tctgtttccc 1020  
gcatctacgc agtctttacc tcccagtgcc aggttgccgg gaccaggagc tcagcagtct 1080  
gtgccttctc tctcacggac attgagcgag tctttaaagg gaagtacaag gagctgaaca 1140  
aggagacctc ccgctggacc acttaccggg gctcagaggt cagcccagg ccaggcagtt 1200  
gctccatggg cccctcctct gacaaaacct tgaccttcat gaaggaccat tttctgatgg 1260  
atgagcacgt ggtaggaaca cccctgctgg tgaagtctgg tgtggagtac acacggcctt 1320  
ctgtggagtc agctcggggc cttgatggga gcagccatgt ggtcatgtat ctgggtacct 1380  
ccacgggtcc cctgcacaag gctgtggtgc ctcaggacag cagtgttat ctcgtggagg 1440  
agattcagct gagccctgac tctgagcctg ttcgaaacct gcagctggcc cccgcccagg 1500  
gtgcagtgtt tgcaggcttc tctggaggca tctggagagt tcccagggcc aattgcagt 1560  
tctacgagag ctgtgtggac tgtgtgcttg ccagggaccc tcaactgtgc tgggaccctg 1620  
aatcaagact ctgcagcctt ctgtctggct ctaccaagcc ttggaagcag gacatggaac 1680  
gcggaacccc ggagtgggta tgcacccgtg gcccctatgg caggagcccc cggcgtcaga 1740  
gccccctca actaattaaa gaagtcctga cagtcctcaa ctccatcctg gagctgcgct 1800  
gccccacct gtcagcactg gcctcttacc actggagtca tggccgagcc aaaatctcag 1860  
aagcctctgc taccgtctac aatggctccc tcttgctgct gccgcaggat ggtgtcgggg 1920  
gcctctacca gtgtgtggcg actgagaacg gctactcata ccctgtggtc tcctattggg 1980

09578063.052400

```

tagacagcca ggaccagccc ctggcgctgg accctgagct ggcgggcggt ccccgtagagc 2040
gtgtgcaggt cccgctgacc agggtcggag gcggagcttc catggctgcc cagcggtcct 2100
actggcccca ttttctcatc gttaccgtcc tcctggccat cgtgctcctg ggagtgtca 2160
ctctctcct cgcttccccca ctggggggcg tgccgggctcg gggtaagggt cagggctgtg 2220
ggatgctgcc cccaggggaa aaggctccac tgagcaggga ccagcacctc cagccctcca 2280
aggaccacag gacctctgcc agtgacgtag atgccgacaa caaccatctg ggcgccgaag 2340
tggcttaaac agggacacag atccgcagct gagcagagca agccactggc cttgttggct 2400
atgccaggca cagtgccact ctgaccaggg taggaggctc tcctgctaac gtgtgtcacc 2460
tacagcacc agtaggtcct cccctgtggg actctcttct gcaagcacat tgggctgtct 2520
ccatacctgt acttgtgctg tgacaggaag agccagacag gtttcttga ttttgattga 2580
cccaagagcc ctgctgtaa caaacgtgct ccaggagacc atgaaagggt tggctgtctg 2640
ggattctgtg gtgacaaacc taagcatccg agcaagctgg ggctattcct gcaaactcca 2700
tcctgaacgc tgtcactcta gaagcagctg ctgctttgaa caccagccca ccctccttcc 2760
caagagtctc tatggagttg gcccttgtg tttcctttac cagtcggggc atactgtttg 2820
ggaagtcatc tctgaagtct aaccaccttc cttcttgggt cagtttggac agattgttat 2880
tattgtctct gccctggcta gaatgggggc ataactctgag ccttgttccc ttgtccagtg 2940
tggctgacct ttgacctct ccttctcct ccctttgttt tgggattcag aaaactgctt 3000
gtcacagaca atttatTTTT tattaaaaaa gatataagct ttaaag 3046

```

<210> 72

<211> 2915

<212> DNA

<213> Mus sp.

<400> 72

```

gtcagccac gcgtccggcc gcgcgtcctt ctgccggctt cagctcgtat ccccgagtc 60
caccgcccc tcccggggtg cggactggcc ctgagctggc cgtacagccc ggcttcggac 120
ggtcctcgct ggagccatgg gccgccggct cggcagggtg gcggcgctgc tgctcgggct 180
gctagtggag tgactgagg ccaaaaaaca ttgctggtat tttgaaggac tctatccac 240
atactatata tgccgttcct atgaagactg ctgtggctcc aggtgctgtg tgagggccct 300
ttccatacag aggctgtggt atttttggtt cctgctgatg atgggtgtgc tgttctgctg 360
tgggtccggt ttcttcattc gccggcgcat gtatccgcca ccactcattg aggagccac 420
attcaatgtg tcctatacca ggcagccacc aaatcctgct ccaggagcac agcaaattgg 480
accgccatat tacaccgacc ctggaggacc cgggatgaat cctgttggca ataccatggc 540
tatggctttc caggtccagc ccaattcacc tcacggaggc acaacttacc cccccctcc 600
ttcctactgc aacacgcctc cccccctta tgaacagggt gtgaaggaca agtagcaaga 660
tgctacatca aaggcaaaga ggatggacag gcccttttgt ttaccttccc atcctcaccg 720
atacttgctg atagggtggt ccaagggaaa acttggatat tctcaaagca agcccagctc 780
tctttcaagt cttttgtgga ggacatttga atccacactg tctcctctgt tgcttctgtt 840
tctgatgtag tctgtgctct ctgagagagt gtggcaacag tccctgaggg ttgatattcc 900
tagggtgtcc agggtagatc ctcgggagag aggctaagg gaaaggagg catagcctgt 960
gtgttagggg gcagataaag tggtcaggct gagataagac tcacatgatg cagtagttgg 1020
cagtgaactt cgaagagaca ctatccacca tcccagccca ttctcctaag agaagctgtg 1080
gggctgtgtt gttgatgctc tttggctctc actcacattt tgaataatagg ctttcctctg 1140
caggaatagg aaagacccaa gtacatatatt gcttccactt aaaaatgagg gtcagaacca 1200
ggcctcagtt ggacatctat agttaataaa aggccattag agaggggaaa tctttaagtt 1260
aggggaaatt ctctaaatgg agacattgct ttttatgaat catcgtctgg cttttctttt 1320

```

```

agtgcattgta ttgaagtgag ggtgtccttt gagatcagat ggggagagtg aactctgcgg 1380
gggggtgggggt gtctctactc agaggggtcc aacacccttt tcttaggtag ttctgggtgat 1440
gggttttatg ggcactatag agctgagggg cacattaggc cgggtagtta cattgaccct 1500
tggagaggaa gaggacagcc aaagaaactc agcaaagcaa gaccagcatt gctgagttag 1560
agctaggggt gtatgtgatc ccaacagaga tgtgctggcc tcagaagagg ggacgtttgt 1620
ggatagagcc gtgaaaacct acttagttgc acagatgaca taatcaaaa tagagaaaga 1680
agtgtagtta gagatgccat ttcccagggt agaatcagag ctcatccata gatttacaag 1740
tagtggctgg agttaacagt atggagttct tttcccttgc gtagttagtc acgttgatgt 1800
gtatttaaac ccaggttgag accttgtgta ctaagagcaa ggaagtatag ctaagatgtc 1860
tagattatatt atagttagta tgggtggggag tggggctgca aggaaggggg ctgacattgt 1920
aaatgagaaa atcagagcca ttgtataaac tgttacttgt tggatcaggc atccaaaagt 1980
gtctcttgag tggacattga gtattcttta ccacctacaa gaccaggagg catggtgtca 2040
ttctccattg gggattttat atgaggtaga gggttcaggaa tcgacagtag ctgtgtgggc 2100
ttagtttaag gactgaaagc atagggactg gtagacagtt tcataggaaa ctgcggggaa 2160
ggaatggata cctttaaaga cagtttgtgg atgcagatgc tgccacccat cattgagcac 2220
ccttgtgtct ctggcttcct gtcactggat ccagtacccc tccatgcttg ggtccttgtt 2280
ttacataaga caacaaagca caatgtctgc tgtttacaat caagacgact acatgggtcca 2340
aacatttctt ctctcttcta tcacttgtgg ctttaacttc catttcctcc gttccttttt 2400
aaaatcaaga agcacagtca gagctgcccc tgggattgca tcaggggaac gctgatcaag 2460
gcattcagtg tccatgacta aatcttatct ttttgatagc aaatccttt aagaaactga 2520
acaattgcta aggctcagca attttatact ccaatgtctg tgtaaggtaa attttgtttg 2580
ccattgagcc cacattggaa ttccttctga cgtcaacact gacaatgcct atggaaattg 2640
cacttctggg tatatgtccc agcatccttg ttttcttatg tttggtgagt aaggctcacc 2700
ccttccagca gctctacttc tgtgtgctga ggtcctgtag agccggggct tgggcacaga 2760
catgaggcag acttgtgcat gctctttctt ggcaacactt ggctcatatt tcttgttctc 2820
ttttgataga gtctgtttc ctatgtattt aaaaaataat aaaagtgaat ttagtcaaaa 2880
aaaaaaaaaa aaaaaaaaaa aaaaagggcg gccgc 2915

```

<210> 73  
 <211> 516  
 <212> DNA  
 <213> Mus sp.

```

<400> 73
atgggccgcc ggctcggcag ggtggcggcg ctgctgctcg ggctgctagt ggagtgcact 60
gaggccaaaa aacattgctg gtattttgaa ggactctatc ccacatacta tatatgccgt 120
tcctatgaag actgctgtgg ctccagggtgc tgtgtgaggg ccctttccat acagaggctg 180
tggatattttt ggttcctgct gatgatgggt gtgctgttct gctgtggtgc cgttttcttc 240
attcgccggc gcatgtatcc gccaccactc attgaggagc ccacattcaa tgtgtcctat 300
accaggcagc caccaaaatcc tgctccagga gcacagcaaa tgggaccgcc atattacacc 360
gaccctggag gacccgggat gaatcctgtt ggcaatacca tggctatggc tttccagggtc 420
cagcccaatt cacctcacgg aggcacaact taccacccc ctcttctcta ctgcaacacg 480
cctccacccc cctatgaaca ggtgggtgaag gacaag 516

```

<210> 74  
 <211> 172

<212> PRT  
 <213> Mus sp.

<400> 74

Met	Gly	Arg	Arg	Leu	Gly	Arg	Val	Ala	Ala	Leu	Leu	Leu	Gly	Leu	Leu	1	5	10	15
Val	Glu	Cys	Thr	Glu	Ala	Lys	Lys	His	Cys	Trp	Tyr	Phe	Glu	Gly	Leu	20	25	30	
Tyr	Pro	Thr	Tyr	Tyr	Ile	Cys	Arg	Ser	Tyr	Glu	Asp	Cys	Cys	Gly	Ser	35	40	45	
Arg	Cys	Cys	Val	Arg	Ala	Leu	Ser	Ile	Gln	Arg	Leu	Trp	Tyr	Phe	Trp	50	55	60	
Phe	Leu	Leu	Met	Met	Gly	Val	Leu	Phe	Cys	Cys	Gly	Ala	Gly	Phe	Phe	65	70	75	80
Ile	Arg	Arg	Arg	Met	Tyr	Pro	Pro	Pro	Leu	Ile	Glu	Glu	Pro	Thr	Phe	85	90	95	
Asn	Val	Ser	Tyr	Thr	Arg	Gln	Pro	Pro	Asn	Pro	Ala	Pro	Gly	Ala	Gln	100	105	110	
Gln	Met	Gly	Pro	Pro	Tyr	Tyr	Thr	Asp	Pro	Gly	Gly	Pro	Gly	Met	Asn	115	120	125	
Pro	Val	Gly	Asn	Thr	Met	Ala	Met	Ala	Phe	Gln	Val	Gln	Pro	Asn	Ser	130	135	140	
Pro	His	Gly	Gly	Thr	Thr	Tyr	Pro	Pro	Pro	Pro	Ser	Tyr	Cys	Asn	Thr	145	150	155	160
Pro	Pro	Pro	Pro	Tyr	Glu	Gln	Val	Val	Lys	Asp	Lys	165	170						

<210> 75  
 <211> 398  
 <212> PRT  
 <213> Homo sapiens

<400> 75

Met	Trp	Leu	Leu	Leu	Thr	Met	Ala	Ser	Leu	Ile	Ser	Val	Leu	Gly	Thr	1	5	10	15
Thr	His	Gly	Leu	Phe	Gly	Lys	Leu	His	Pro	Gly	Ser	Pro	Glu	Val	Thr				

0014250.E9067.052400



004250" E908760

Met	Asn	Ile	Ser	Gln	Met	Ile	Thr	Tyr	Trp	Gly	Tyr	Pro	Asn	Glu	Glu	20	25	30
	35						40					45						
Tyr	Glu	Val	Val	Thr	Glu	Asp	Gly	Tyr	Ile	Leu	Glu	Val	Asn	Arg	Ile			
	50					55					60							
Pro	Tyr	Gly	Lys	Lys	Asn	Ser	Gly	Asn	Thr	Gly	Gln	Arg	Pro	Val	Val			
65					70					75					80			
Phe	Leu	Gln	His	Gly	Leu	Leu	Ala	Ser	Ala	Thr	Asn	Trp	Ile	Ser	Asn			
				85					90					95				
Leu	Pro	Asn	Asn	Ser	Leu	Ala	Phe	Ile	Leu	Ala	Asp	Ala	Gly	Tyr	Asp			
		100						105					110					
Val	Trp	Leu	Gly	Asn	Ser	Arg	Gly	Asn	Thr	Trp	Ala	Arg	Arg	Asn	Leu			
		115					120					125						
Tyr	Tyr	Ser	Pro	Asp	Ser	Val	Glu	Phe	Trp	Ala	Phe	Ser	Phe	Asp	Glu			
	130					135					140							
Met	Ala	Lys	Tyr	Asp	Leu	Pro	Ala	Thr	Ile	Asp	Phe	Ile	Val	Lys	Lys			
145					150					155					160			
Thr	Gly	Gln	Lys	Gln	Leu	His	Tyr	Val	Gly	His	Ser	Gln	Gly	Thr	Thr			
				165					170					175				
Ile	Gly	Phe	Ile	Ala	Phe	Ser	Thr	Asn	Pro	Ser	Leu	Ala	Lys	Arg	Ile			
			180					185					190					
Lys	Thr	Phe	Tyr	Ala	Leu	Ala	Pro	Val	Ala	Thr	Val	Lys	Tyr	Thr	Lys			
		195					200					205						
Ser	Leu	Ile	Asn	Lys	Leu	Arg	Phe	Val	Pro	Gln	Ser	Leu	Phe	Lys	Phe			
	210					215					220							
Ile	Phe	Gly	Asp	Lys	Ile	Phe	Tyr	Pro	His	Asn	Phe	Phe	Asp	Gln	Phe			
225					230					235					240			
Leu	Ala	Thr	Glu	Val	Cys	Ser	Arg	Glu	Met	Leu	Asn	Leu	Leu	Cys	Ser			
			245					250						255				
Asn	Ala	Leu	Phe	Ile	Ile	Cys	Gly	Phe	Asp	Ser	Lys	Asn	Phe	Asn	Thr			
		260						265					270					
Ser	Arg	Leu	Asp	Val	Tyr	Leu	Ser	His	Asn	Pro	Ala	Gly	Thr	Ser	Val			

001250" E9082560

275 280 285

Gln Asn Met Phe His Trp Thr Gln Ala Val Lys Ser Gly Lys Phe Gln  
290 295 300

Ala Tyr Asp Trp Gly Ser Pro Val Gln Asn Arg Met His Tyr Asp Gln  
305 310 315 320

Ser Gln Pro Pro Tyr Tyr Asn Val Thr Ala Met Asn Val Pro Ile Ala  
325 330 335

Val Trp Asn Gly Gly Lys Asp Leu Leu Ala Asp Pro Gln Asp Val Gly  
340 345 350

Leu Leu Leu Pro Lys Leu Pro Asn Leu Ile Tyr His Lys Glu Ile Pro  
355 360 365

Phe Tyr Asn His Leu Asp Phe Ile Trp Ala Met Asp Ala Pro Gln Glu  
370 375 380

Val Tyr Asn Asp Ile Val Ser Met Ile Ser Glu Asp Lys Lys  
385 390 395

<210> 76  
<211> 760  
<212> PRT  
<213> Mus sp.

<400> 76  
Met Ala Leu Pro Ser Leu Gly Gln Asp Ser Trp Ser Leu Leu Arg Val  
1 5 10 15

Phe Phe Phe Gln Leu Phe Leu Leu Pro Ser Leu Pro Pro Ala Ser Gly  
20 25 30

Thr Gly Gly Gln Gly Pro Met Pro Arg Val Lys Tyr His Ala Gly Asp  
35 40 45

Gly His Arg Ala Leu Ser Phe Phe Gln Gln Lys Gly Leu Arg Asp Phe  
50 55 60

Asp Thr Leu Leu Leu Ser Asp Asp Gly Asn Thr Leu Tyr Val Gly Ala  
65 70 75 80

Arg Glu Thr Val Leu Ala Leu Asn Ile Gln Asn Pro Gly Ile Pro Arg  
85 90 95

09578063-052400

Leu	Lys	Asn	Met	Ile	Pro	Trp	Pro	Ala	Ser	Glu	Arg	Lys	Lys	Thr	Glu	100	105	110
Cys	Ala	Phe	Lys	Lys	Lys	Ser	Asn	Glu	Thr	Gln	Cys	Phe	Asn	Phe	Ile	115	120	125
Arg	Val	Leu	Val	Ser	Tyr	Asn	Ala	Thr	His	Leu	Tyr	Ala	Cys	Gly	Thr	130	135	140
Phe	Ala	Phe	Ser	Pro	Ala	Cys	Thr	Phe	Ile	Glu	Leu	Gln	Asp	Ser	Leu	145	150	155
Leu	Leu	Pro	Ile	Leu	Ile	Asp	Lys	Val	Met	Asp	Gly	Lys	Gly	Gln	Ser	165	170	175
Pro	Leu	Thr	Leu	Phe	Thr	Ser	Thr	Gln	Ala	Val	Leu	Val	Asp	Gly	Met	180	185	190
Leu	Tyr	Ser	Gly	Thr	Met	Asn	Asn	Phe	Leu	Gly	Ser	Glu	Pro	Ile	Leu	195	200	205
Met	Arg	Thr	Leu	Gly	Ser	His	Pro	Val	Leu	Lys	Thr	Asp	Ile	Phe	Leu	210	215	220
Arg	Trp	Leu	His	Ala	Asp	Ala	Ser	Phe	Val	Ala	Ala	Ile	Pro	Ser	Thr	225	230	235
Gln	Val	Val	Tyr	Phe	Phe	Phe	Glu	Glu	Thr	Ala	Ser	Glu	Phe	Asp	Phe	245	250	255
Phe	Glu	Glu	Leu	Tyr	Ile	Ser	Arg	Val	Ala	Gln	Val	Cys	Lys	Asn	Asp	260	265	270
Val	Gly	Gly	Glu	Lys	Leu	Leu	Gln	Lys	Lys	Trp	Thr	Thr	Phe	Leu	Lys	275	280	285
Ala	Gln	Leu	Leu	Cys	Ala	Gln	Pro	Gly	Gln	Leu	Pro	Phe	Asn	Ile	Ile	290	295	300
Arg	His	Ala	Val	Leu	Leu	Pro	Ala	Asp	Ser	Pro	Ser	Val	Ser	Arg	Ile	305	310	315
Tyr	Ala	Val	Phe	Thr	Ser	Gln	Trp	Gln	Val	Gly	Gly	Thr	Arg	Ser	Ser	325	330	335
Ala	Val	Cys	Ala	Phe	Ser	Leu	Thr	Asp	Ile	Glu	Arg	Val	Phe	Lys	Gly	340	345	350

004250" 09037560

Lys	Tyr	Lys	Glu	Leu	Asn	Lys	Glu	Thr	Ser	Arg	Trp	Thr	Thr	Tyr	Arg	355	360	365	
Gly	Ser	Glu	Val	Ser	Pro	Arg	Pro	Gly	Ser	Cys	Ser	Met	Gly	Pro	Ser	370	375	380	
Ser	Asp	Lys	Ala	Leu	Thr	Phe	Met	Lys	Asp	His	Phe	Leu	Met	Asp	Glu	385	390	395	400
His	Val	Val	Gly	Thr	Pro	Leu	Leu	Val	Lys	Ser	Gly	Val	Glu	Tyr	Thr	405	410	415	
Arg	Leu	Ala	Val	Glu	Ser	Ala	Arg	Gly	Leu	Asp	Gly	Ser	Ser	His	Val	420	425	430	
Val	Met	Tyr	Leu	Gly	Thr	Ser	Thr	Gly	Pro	Leu	His	Lys	Ala	Val	Val	435	440	445	
Pro	Gln	Asp	Ser	Ser	Ala	Tyr	Leu	Val	Glu	Glu	Ile	Gln	Leu	Ser	Pro	450	455	460	
Asp	Ser	Glu	Pro	Val	Arg	Asn	Leu	Gln	Leu	Ala	Pro	Ala	Gln	Gly	Ala	465	470	475	480
Val	Phe	Ala	Gly	Phe	Ser	Gly	Gly	Ile	Trp	Arg	Val	Pro	Arg	Ala	Asn	485	490	495	
Cys	Ser	Val	Tyr	Glu	Ser	Cys	Val	Asp	Cys	Val	Leu	Ala	Arg	Asp	Pro	500	505	510	
His	Cys	Ala	Trp	Asp	Pro	Glu	Ser	Arg	Leu	Cys	Ser	Leu	Leu	Ser	Gly	515	520	525	
Ser	Thr	Lys	Pro	Trp	Lys	Gln	Asp	Met	Glu	Arg	Gly	Asn	Pro	Glu	Trp	530	535	540	
Val	Cys	Thr	Arg	Gly	Pro	Met	Ala	Arg	Ser	Pro	Arg	Arg	Gln	Ser	Pro	545	550	555	560
Pro	Gln	Leu	Ile	Lys	Glu	Val	Leu	Thr	Val	Pro	Asn	Ser	Ile	Leu	Glu	565	570	575	
Leu	Arg	Cys	Pro	His	Leu	Ser	Ala	Leu	Ala	Ser	Tyr	His	Trp	Ser	His	580	585	590	
Gly	Arg	Ala	Lys	Ile	Ser	Glu	Ala	Ser	Ala	Thr	Val	Tyr	Asn	Gly	Ser	595	600	605	

Leu Leu Leu Leu Pro Gln Asp Gly Val Gly Gly Leu Tyr Gln Cys Val  
610 615 620

Ala Thr Glu Asn Gly Tyr Ser Tyr Pro Val Val Ser Tyr Trp Val Asp  
625 630 635 640

Ser Gln Asp Gln Pro Leu Ala Leu Asp Pro Glu Leu Ala Gly Val Pro  
645 650 655

Arg Glu Arg Val Gln Val Pro Leu Thr Arg Val Gly Gly Gly Ala Ser  
660 665 670

Met Ala Ala Gln Arg Ser Tyr Trp Pro His Phe Leu Ile Val Thr Val  
675 680 685

Leu Leu Ala Ile Val Leu Leu Gly Val Leu Thr Leu Leu Leu Ala Ser  
690 695 700

Pro Leu Gly Ala Leu Arg Ala Arg Gly Lys Val Gln Gly Cys Gly Met  
705 710 715 720

Leu Pro Pro Arg Glu Lys Ala Pro Leu Ser Arg Asp Gln His Leu Gln  
725 730 735

Pro Ser Lys Asp His Arg Thr Ser Ala Ser Asp Val Asp Ala Asp Asn  
740 745 750

Asn His Leu Gly Ala Glu Val Ala  
755 760

<210> 77

<211> 3046

<212> DNA

<213> Mus sp.

<400> 77

ctcggacgcc tgggttaggg gtctgtactg ctggggaacc atctggtgac catctcaggc 60  
tgaccatggc cctaccatcc ctgggccagg actcatggag tctcctgcgt gtttttttct 120  
tccaactctt cctgctgcca tcaactgccac ctgcttctgg gactggtggt caggggcccc 180  
tgcccagagt caaataccat gctggagacg ggcacagggc cctcagcttc ttccaacaaa 240  
aaggcctccg agactttgac acgctgctcc tgagtgcga tggcaacact ctctatgtgg 300  
gggctcgaga gaccgtcctg gccttgaata tccagaaccc aggaatccca aggctaaaga 360  
acatgatacc ctggccagcc agtgagagaa aaaagaccga atgtgccttt aagaagaaga 420  
gcaatgagac acagtgtttc aacttcattc gagtcctggt ctcttacaat gctactcacc 480  
tctatgcctg tgggaccttt gccttcagcc ctgcctgtac cttcattgaa ctccaagatt 540  
ccctcctggt gcccatcttg atagacaagg tcatggacgg gaagggccaa agccctttga 600  
ccctgttcac aagcacacaa gctgtcttgg tcgatgggat gctttattcc ggcaccatga 660

```

acaacttcct gggcagcgag cccatcctga tgcggacact gggatcccat cctgtttctca 720
agactgacat cttcttacgc tggctgcacg cggatgcctc cttcgtggca gccattccat 780
ccaccaggt cgtctatttc ttctttgagg agacagccag cgagtttgac ttctttgaag 840
agctgtatat atccaggggtg gctcaagtct gcaagaacga cgtgggcggt gaaaagctgc 900
tgcagaagaa gtggaccacc ttctctaaag cccagttgct ctgcgctcag ccagggcagc 960
tgccattcaa catcatccgc cacgcggtcc tgctgcccgc cgattctccc tctgtttccc 1020
gcatctacgc agtctttacc tcccagtggc aggttgccgg gaccaggagc tcagcagtct 1080
gtgcctttctc tctcacggac attgagcgag tctttaaagg gaagtacaag gagctgaaca 1140
aggagacctc ccgctggacc acttaccggg gctcagaggt cagcccgagg ccaggcagtt 1200
gctccatggg cccctcctct gacaaagcct tgaccttcat gaaggacat tttctgatgg 1260
atgagcacgt ggtaggaaca cccctgctgg tgaagtctgg tgtggagtag acacggcttg 1320
ctgtggagtc agctcggggc cttgatggga gcagccatgt ggtcatgtat ctgggtacct 1380
ccacgggtcc cctgcacaag gctgtggtgc ctcaggacag cagtgcctat ctcgtggagg 1440
agattcagct gagccctgac tctgagcctg ttcgaaacct gcagctggcc cccgcccagg 1500
gtgcagtgtt tgcaggcttc tctggaggca tctggagagt tcccagggcc aattgcagtg 1560
tctacgagag ctgtgtggac tgtgtgcttg ccagggaccc tcaactgtgc tgggaccctg 1620
aatcaagact ctgcagcctt ctgtctggct ctaccaagcc ttggaagcag gacatggaac 1680
gcggaaccc ggagtgggta tgcacccgtg gccccatggc caggagcccc cggcgtcaga 1740
gccccctca actaattaaa gaagtcctga cagtccccaa ctccatcctg gagctgcgt 1800
gccccacct gtcagcactg gcctcttacc actggagtca tggccgagcc aaaatctcag 1860
aagcctctgc taccgtctac aatggctccc tcttgctgct gccgcaggat ggtgtcgggg 1920
gcctctacca gtgtgtggcg actgagaacg gctactcata ccctgtgggtc tcctattggg 1980
tagacagcca ggaccagccc ctggcgctgg accctgagct ggccggcggt ccccgtagc 2040
gtgtgcaggt cccgctgacc agggctcgag gcggagcttc catggctgcc cagcggctcct 2100
actggcccca ttttctcatc gttaccgtcc tcctggccat cgtgctcctg ggagtgtc 2160
ctctcctcct cgcttcccca ctgggggctg tgcgggctcg gggtaagggt cagggtgtg 2220
ggatgctgcc cccagggaa aaggctccac tgagcaggga ccagcacctc cagccctcca 2280
aggaccacag gacctctgcc agtgacgtag atgccgacaa caacctctg ggcgccgaag 2340
tggcttaaac agggacacag atccgcagct gagcagagca agccactggc cttgttggct 2400
atgccaggca cagtccact ctgaccaggg taggaggctc tcctgctaac gtgtgtcacc 2460
tacagacccc agtaggtcct cccctgtggg actctcttct gcaagcacat tgggctgtct 2520
ccatacctgt acttgtgctg tgacaggaag agccagacag gtttctttga ttttgattga 2580
cccaagagcc ctgcctgtaa caaacgtgct ccaggagacc atgaaagggt tggctgtctg 2640
ggattctgtg gtgacaaacc taagcatccg agcaagctgg ggctattcct gcaaactcca 2700
tcctgaacgc tgtactcta gaagcagctg ctgctttgaa caccagccca ccctccttcc 2760
caagagtctc tatggagttg gccccttggt tttcctttac cagtcggggc atactgtttg 2820
ggaagtcatc tctgaagtct aaccaccttc cttcttggtt cagtttggac agattgttat 2880
tattgtctct gccctggcta gaatgggggc ataactctgag ccttgttccc ttgtccagt 2940
tggctgacct ttgacctct ccttcctcct ccctttgttt tgggattcag aaaactgctt 3000
gtcacagaca atttattttt tattaaaaaa gatataagct ttaaag 3046

```

<210> 78

<211> 1436

<212> PRT

<213> Bos sp.

<400> 78

001250" E9037560

Met	Ala	Leu	Gly	Arg	His	Leu	Ser	Leu	Arg	Gly	Leu	Cys	Val	Leu	Leu	1	5	10	15
Leu	Gly	Thr	Met	Val	Gly	Gly	Gln	Ala	Leu	Glu	Leu	Arg	Leu	Lys	Asp	20	25	30	
Gly	Val	His	Arg	Cys	Glu	Gly	Arg	Val	Glu	Val	Lys	His	Gln	Gly	Glu	35	40	45	
Trp	Gly	Thr	Val	Asp	Gly	Tyr	Arg	Trp	Thr	Leu	Lys	Asp	Ala	Ser	Val	50	55	60	
Val	Cys	Arg	Gln	Leu	Gly	Cys	Gly	Ala	Ala	Ile	Gly	Phe	Pro	Gly	Gly	65	70	75	80
Ala	Tyr	Phe	Gly	Pro	Gly	Leu	Gly	Pro	Ile	Trp	Leu	Leu	Tyr	Thr	Ser	85	90	95	
Cys	Glu	Gly	Thr	Glu	Ser	Thr	Val	Ser	Asp	Cys	Glu	His	Ser	Asn	Ile	100	105	110	
Lys	Asp	Tyr	Arg	Asn	Asp	Gly	Tyr	Asn	His	Gly	Arg	Asp	Ala	Gly	Val	115	120	125	
Val	Cys	Ser	Gly	Phe	Val	Arg	Leu	Ala	Gly	Gly	Asp	Gly	Pro	Cys	Ser	130	135	140	
Gly	Arg	Val	Glu	Val	His	Ser	Gly	Glu	Ala	Trp	Ile	Pro	Val	Ser	Asp	145	150	155	160
Gly	Asn	Phe	Thr	Leu	Ala	Thr	Ala	Gln	Ile	Ile	Cys	Ala	Glu	Leu	Gly	165	170	175	
Cys	Gly	Lys	Ala	Val	Ser	Val	Leu	Gly	His	Glu	Leu	Phe	Arg	Glu	Ser	180	185	190	
Ser	Ala	Gln	Val	Trp	Ala	Glu	Glu	Phe	Arg	Cys	Glu	Gly	Glu	Glu	Pro	195	200	205	
Glu	Leu	Trp	Val	Cys	Pro	Arg	Val	Pro	Cys	Pro	Gly	Gly	Thr	Cys	His	210	215	220	
His	Ser	Gly	Ser	Ala	Gln	Val	Val	Cys	Ser	Ala	Tyr	Ser	Glu	Val	Arg	225	230	235	240
Leu	Met	Thr	Asn	Gly	Ser	Ser	Gln	Cys	Glu	Gly	Gln	Val	Glu	Met	Asn	245	250	255	

Ile Ser Gly Gln Trp Arg Ala Leu Cys Ala Ser His Trp Ser Leu Ala  
260 265 270

Asn Ala Asn Val Ile Cys Arg Gln Leu Gly Cys Gly Val Ala Ile Ser  
275 280 285

Thr Pro Gly Gly Pro His Leu Val Glu Glu Gly Asp Gln Ile Leu Thr  
290 295 300

Ala Arg Phe His Cys Ser Gly Ala Glu Ser Phe Leu Trp Ser Cys Pro  
305 310 315 320

Val Thr Ala Leu Gly Gly Pro Asp Cys Ser His Gly Asn Thr Ala Ser  
325 330 335

Val Ile Cys Ser Gly Asn Gln Ile Gln Val Leu Pro Gln Cys Asn Asp  
340 345 350

Ser Val Ser Gln Pro Thr Gly Ser Ala Ala Ser Glu Asp Ser Ala Pro  
355 360 365

Tyr Cys Ser Asp Ser Arg Gln Leu Arg Leu Val Asp Gly Gly Gly Pro  
370 375 380

Cys Ala Gly Arg Val Glu Ile Leu Asp Gln Gly Ser Trp Gly Thr Ile  
385 390 395 400

Cys Asp Asp Gly Trp Asp Leu Asp Asp Ala Arg Val Val Cys Arg Gln  
405 410 415

Leu Gly Cys Gly Glu Ala Leu Asn Ala Thr Gly Ser Ala His Phe Gly  
420 425 430

Ala Gly Ser Gly Pro Ile Trp Leu Asp Asn Leu Asn Cys Thr Gly Lys  
435 440 445

Glu Ser His Val Trp Arg Cys Pro Ser Arg Gly Trp Gly Gln His Asn  
450 455 460

Cys Arg His Lys Gln Asp Ala Gly Val Ile Cys Ser Glu Phe Leu Ala  
465 470 475 480

Leu Arg Met Val Ser Glu Asp Gln Gln Cys Ala Gly Trp Leu Glu Val  
485 490 495

Phe Tyr Asn Gly Thr Trp Gly Ser Val Cys Arg Asn Pro Met Glu Asp  
500 505 510

09578063-052400



004250" E9087560

Ile	Thr	Val	Ser	Thr	Ile	Cys	Arg	Gln	Leu	Gly	Cys	Gly	Asp	Ser	Gly	515	520	525
Thr	Leu	Asn	Ser	Ser	Val	Ala	Leu	Arg	Glu	Gly	Phe	Arg	Pro	Gln	Trp	530	535	540
Val	Asp	Arg	Ile	Gln	Cys	Arg	Lys	Thr	Asp	Thr	Ser	Leu	Trp	Gln	Cys	545	550	555
Pro	Ser	Asp	Pro	Trp	Asn	Tyr	Asn	Ser	Cys	Ser	Pro	Lys	Glu	Glu	Ala	565	570	575
Tyr	Ile	Trp	Cys	Ala	Asp	Ser	Arg	Gln	Ile	Arg	Leu	Val	Asp	Gly	Gly	580	585	590
Gly	Arg	Cys	Ser	Gly	Arg	Val	Glu	Ile	Leu	Asp	Gln	Gly	Ser	Trp	Gly	595	600	605
Thr	Ile	Cys	Asp	Asp	Arg	Trp	Asp	Leu	Asp	Asp	Ala	Arg	Val	Val	Cys	610	615	620
Lys	Gln	Leu	Gly	Cys	Gly	Glu	Ala	Leu	Asp	Ala	Thr	Val	Ser	Ser	Phe	625	630	635
Phe	Gly	Thr	Gly	Ser	Gly	Pro	Ile	Trp	Leu	Asp	Glu	Val	Asn	Cys	Arg	645	650	655
Gly	Glu	Glu	Ser	Gln	Val	Trp	Arg	Cys	Pro	Ser	Trp	Gly	Trp	Arg	Gln	660	665	670
His	Asn	Cys	Asn	His	Gln	Glu	Asp	Ala	Gly	Val	Ile	Cys	Ser	Gly	Phe	675	680	685
Val	Arg	Leu	Ala	Gly	Gly	Asp	Gly	Pro	Cys	Ser	Gly	Arg	Val	Glu	Val	690	695	700
His	Ser	Gly	Glu	Ala	Trp	Thr	Pro	Val	Ser	Asp	Gly	Asn	Phe	Thr	Leu	705	710	715
Pro	Thr	Ala	Gln	Val	Ile	Cys	Ala	Glu	Leu	Gly	Cys	Gly	Lys	Ala	Val	725	730	735
Ser	Val	Leu	Gly	His	Met	Pro	Phe	Arg	Glu	Ser	Asp	Gly	Gln	Val	Trp	740	745	750
Ala	Glu	Glu	Phe	Arg	Cys	Asp	Gly	Gly	Glu	Pro	Glu	Leu	Trp	Ser	Cys	755	760	765

Pro Arg Val Pro Cys Pro Gly Gly Thr Cys Leu His Ser Gly Ala Ala  
770 775 780

Gln Val Val Cys Ser Val Tyr Thr Glu Val Gln Leu Met Lys Asn Gly  
785 790 795 800

Thr Ser Gln Cys Glu Gly Gln Val Glu Met Lys Ile Ser Gly Arg Trp  
805 810 815

Arg Ala Leu Cys Ala Ser His Trp Ser Leu Ala Asn Ala Asn Val Val  
820 825 830

Cys Arg Gln Leu Gly Cys Gly Val Ala Ile Ser Thr Pro Arg Gly Pro  
835 840 845

His Leu Val Glu Gly Gly Asp Gln Ile Ser Thr Ala Gln Phe His Cys  
850 855 860

Ser Gly Ala Glu Ser Phe Leu Trp Ser Cys Pro Val Thr Ala Leu Gly  
865 870 875 880

Gly Pro Asp Cys Ser His Gly Asn Thr Ala Ser Val Ile Cys Ser Gly  
885 890 895

Asn His Thr Gln Val Leu Pro Gln Cys Asn Asp Phe Leu Ser Gln Pro  
900 905 910

Ala Gly Ser Ala Ala Ser Glu Glu Ser Ser Pro Tyr Cys Ser Asp Ser  
915 920 925

Arg Gln Leu Arg Leu Val Asp Gly Gly Gly Pro Cys Gly Gly Arg Val  
930 935 940

Glu Ile Leu Asp Gln Gly Ser Trp Gly Thr Ile Cys Asp Asp Asp Trp  
945 950 955 960

Asp Leu Asp Asp Ala Arg Val Val Cys Arg Gln Leu Gly Cys Gly Glu  
965 970 975

Ala Leu Asn Ala Thr Gly Ser Ala His Phe Gly Ala Gly Ser Gly Pro  
980 985 990

Ile Trp Leu Asp Asp Leu Asn Cys Thr Gly Lys Glu Ser His Val Trp  
995 1000 1005

Arg Cys Pro Ser Arg Gly Trp Gly Arg His Asp Cys Arg His Lys Glu  
1010 1015 1020

004250-29087560

Asp Ala Gly Val Ile Cys Ser Glu Phe Leu Ala Leu Arg Met Val Ser  
 1025 1030 1035 1040  
 Glu Asp Gln Gln Cys Ala Gly Trp Leu Glu Val Phe Tyr Asn Gly Thr  
 1045 1050 1055  
 Trp Gly Ser Val Cys Arg Ser Pro Met Glu Asp Ile Thr Val Ser Val  
 1060 1065 1070  
 Ile Cys Arg Gln Leu Gly Cys Gly Asp Ser Gly Ser Leu Asn Thr Ser  
 1075 1080 1085  
 Val Gly Leu Arg Glu Gly Ser Arg Pro Arg Trp Val Asp Leu Ile Gln  
 1090 1095 1100  
 Cys Arg Lys Met Asp Thr Ser Leu Trp Gln Cys Pro Ser Gly Pro Trp  
 1105 1110 1115 1120  
 Lys Tyr Ser Ser Cys Ser Pro Lys Glu Glu Ala Tyr Ile Ser Cys Glu  
 1125 1130 1135  
 Gly Arg Arg Pro Lys Ser Cys Pro Thr Ala Ala Ala Cys Thr Asp Arg  
 1140 1145 1150  
 Glu Lys Leu Arg Leu Arg Gly Gly Asp Ser Glu Cys Ser Gly Arg Val  
 1155 1160 1165  
 Glu Val Trp His Asn Gly Ser Trp Gly Thr Val Cys Asp Asp Ser Trp  
 1170 1175 1180  
 Ser Leu Ala Glu Ala Glu Val Val Cys Gln Gln Leu Gly Cys Gly Gln  
 1185 1190 1195 1200  
 Ala Leu Glu Ala Val Arg Ser Ala Ala Phe Gly Pro Gly Asn Gly Ser  
 1205 1210 1215  
 Ile Trp Leu Asp Glu Val Gln Cys Gly Gly Arg Glu Ser Ser Leu Trp  
 1220 1225 1230  
 Asp Cys Val Ala Glu Pro Trp Gly Gln Ser Asp Cys Lys His Glu Glu  
 1235 1240 1245  
 Asp Ala Gly Val Arg Cys Ser Gly Val Arg Thr Thr Leu Pro Thr Thr  
 1250 1255 1260  
 Thr Ala Gly Thr Arg Thr Thr Ser Asn Ser Leu Pro Gly Ile Phe Ser  
 1265 1270 1275 1280

0014250-05063-050400

Leu Pro Gly Val Leu Cys Leu Ile Leu Gly Ser Leu Leu Phe Leu Val  
1285 1290 1295

Leu Val Ile Leu Val Thr Gln Leu Leu Arg Trp Arg Ala Glu Arg Arg  
1300 1305 1310

Ala Leu Ser Ser Tyr Glu Asp Ala Leu Ala Glu Ala Val Tyr Glu Glu  
1315 1320 1325

Leu Asp Tyr Leu Leu Thr Gln Lys Glu Gly Leu Gly Ser Pro Asp Gln  
1330 1335 1340

Met Thr Asp Val Pro Asp Glu Asn Tyr Asp Asp Ala Glu Glu Val Pro  
1345 1350 1355 1360

Val Pro Gly Thr Pro Ser Pro Ser Gln Gly Asn Glu Glu Glu Val Pro  
1365 1370 1375

Pro Glu Lys Glu Asp Gly Val Arg Ser Ser Gln Thr Gly Ser Phe Leu  
1380 1385 1390

Asn Phe Ser Arg Glu Ala Ala Asn Pro Gly Glu Gly Glu Glu Ser Phe  
1395 1400 1405

Trp Leu Leu Gln Gly Lys Lys Gly Asp Ala Gly Tyr Asp Asp Val Glu  
1410 1415 1420

Leu Ser Ala Leu Gly Thr Ser Pro Val Thr Phe Ser  
1425 1430 1435

<210> 79

<211> 4308

<212> DNA

<213> Bos sp.

<400> 79

atggctctgg gcagacacct ctccctgcgg ggactctgtg tctcctcct cggcaccatg 60  
gtgggtggtc aagctctgga gctgaggttg aaggatggag tccatcgctg tgaggggaga 120  
gtggaagtga agcaccaagg agaatggggc acagtggatg gttacaggtg gacattgaag 180  
gatgcatctg tagtgtgcag acagctgggg tgtggagctg ccattggttt tctggagggg 240  
gcttattttg ggccaggact tggccccatt tggcttttgt atacttcatg tgaagggaca 300  
gagtcaactg tcagtgactg tgagcattct aatattaaag actatcgtaa tgatggctat 360  
aatcatggtc gggatgctgg agtagtctgc tcaggatttg tgcgtctggc tggaggggat 420  
ggacctgct cagggcgagt agaagtgcac tctggagaag cttggatccc agtgtctgat 480  
gggaacttca cacttgccac tgcccagatc atctgtgcag agttgggttg tggcaaggct 540  
gtgtctgtcc tgggacatga gctcttcaga gagtccagtg cccaggctctg ggctgaagag 600  
ttcagggtgtg agggggagga gcctgagctc tgggtctgcc ccagagtgcc ctgtccaggg 660

```

ggcacgtgtc accacagtgg atctgctcag gttgtttgtt cagcatactc agaagtccgg 720
ctcatgacaa acggctcctc tcagtgtgaa gggcaggtgg agatgaacat ttctggacaa 780
tggagagcgc tctgtgcctc ccactggagt ctggccaatg ccaatgttat ctgtcgtcag 840
ctcggctgtg gagttgccat ctccaccccc ggaggaccac acttgggtgga agaaggtgat 900
cagatccctaa cagccccgatt tcactgctct ggggctgagt ccttcctgtg gagttgtcct 960
gtgactgccc tgggtggtcc tgactgttcc catggcaaca cagcctctgt gatctgctca 1020
ggaaaccaga tccaggtgct tccccagtgc aacgactccg tgtctcaacc tacaggtctc 1080
gcggcctcag aggacagcgc cccctactgc tcagacagca ggcagctccg cctgggtggac 1140
gggggcggtc cctgcgccgg gagagtggag atccttgacc agggctcctg gggcaccatc 1200
tgtgatgacg gctgggacct ggacgatgcc cgcgtgggtg gcaggcagct gggctgtgga 1260
gaagccctca atgccacggg gtctgtcac ttccggggcag gatcagggcc catctggttg 1320
gacaaçttga actgcacagg aaaggagtcc cacgtgtgga ggtgcccttc ccggggctgg 1380
gggcagcaca actgcagaca caagcaggac gcgggggtca tctgctcaga gttcctggcc 1440
ctcaggatgg tgagtgagga ccagcagtgt gctgggtggc tggaagtttt ctacaatggg 1500
acctggggca gtgtctgccg taaccccatg gaagacatca ctgtgtccac gatctgcaga 1560
cagcttggtc gtggggacag tggaaacctc aactcttctg ttgctcttag agaaggtttt 1620
aggccacagt ggggtggatag aatccagtgt cggaaaactg acacctctct ctggcagtgt 1680
ccttctgacc cttggaatta caactcatgc tctccaaagg aggaagccta tatctggtgt 1740
gcagacagca gacagatccg cctgggtgat ggaggtggc gctgctctgg gagagtggag 1800
atccttgacc agggctcctg gggcaccatc tgtgatgacc gctgggacct ggacgatgcc 1860
cgtgtggtgt gcaagcagct gggctgtgga gaagccctgg acgccactgt ctcttccttc 1920
ttcgggacgg gatcagggcc catctggctg gatgaagtga actgcagagg agaggagtcc 1980
caagtatgga ggtgcccttc ctggggatgg cggcaacaca actgcaatca tcaagaagat 2040
gcaggagtca tctgtcagag atttgtgcgt ctggctggag gagatggacc ctgctcaggg 2100
cgagtagaag tgcattctgg agaagcctgg accccagtgt ctgatggaaa cttcacactc 2160
cccactgccc aggtcatctg tgcaagctg ggatgtggca aggctgtgtc tgtcctggga 2220
cacatgcat tcagagagtc cgatggccag gtctgggctg aagagttcag gtgtgatggg 2280
ggggagcctg agctctggtc ctgcccaga gtgccctgtc caggaggcac atgtctccac 2340
agtggagctg ctcaggttgt ctgttcagtg tacacagaag tccagcttat gaaaaacggc 2400
acctctcaat gtgaggggca ggtggagatg aagatctctg gacgatggag agcgtctgt 2460
gcctcccact ggagtctggc caatgccaat gttgtctgtc gtcagctcg ctgtggagtc 2520
gccatctcca cccccagagg accacacttg gtggaaggag gtgatcagat ctcaacagcc 2580
caatttctact gctcaggggc tgagtccttc ctgtggagtt gtcctgtgac tgccttgggt 2640
gggcctgact gttcccatgg caacacagcc tctgtgatct gtcaggaaa ccacaccag 2700
gtgctgcccc agtgcaacga cttcctgtct caacctgcag gctctgcggc ctcaaggag 2760
agttctccct actgtcaga cagcaggcag ctccgcctgg tggacggggg cggtccctgc 2820
ggcgggagag tggagatcct tgaccagggc tccctggggca ccatctgtga tgatgactgg 2880
gacctggacg atgcccgtgt ggtgtgcagg cagctgggct gtggagaagc cctcaatgcc 2940
acggggctctg ctacttcgg ggcaggatca gggcccatct ggctggacga cctgaactgc 3000
acaggaaaag agtcccacgt gtggaggtgc ccttcccggg gctgggggcg gcacgactgc 3060
agacacaagg aggacgccgg ggtcatctgc tcagagttcc tggccctcag gatggtgagc 3120
gaggaccagc agtgtgctgg gtggctggag gttttctaca acgggacctg gggcagtgtc 3180
tgccgcagcc ccatggaaga tatcactgtg tccgtgatct gcagacagct tggatgtggg 3240
gacagtggaa gtctcaacac ctctgttggg ctcaaggaa gttctagacc ccggtgggta 3300
gatttaattc agtgtcggaa aatggatacc tctctctggc agtgtccttc tggcccatgg 3360
aaatacagtt catgtctctc aaaggaggaa gcctacatct catgtgaagg aagaagaccc 3420
aagagctgtc caactgctgc cgcctgcaca gacagagaga agctccgcct caggggagga 3480
gacagcgagt gctcagggcg ggtggaggtg tggcacaacg gtcctgggg caccgtgtgc 3540

```

gatgactcct	ggagcctggc	agaggctgag	gtggtgtgtc	agcagctggg	ctgtggccag	3600
gccctggaag	ccgtgcggtc	tgcagcattt	ggccctggaa	atgggagcat	ctggctggac	3660
gaggtgcagt	gcgggggccc	ggagtcctcc	ctgtgggact	gtgttgcgga	gccctggggg	3720
cagagcgact	gcaagcacga	ggaggatgct	ggtgtgaggt	gctctggtgt	aaggacaaca	3780
ttgcccacga	ccacagcagg	gaccagaaca	acctcaaatt	ctctccctgg	catcttctcc	3840
ctgcctgggg	ttctctgcct	tatcctgggg	tcgcttctct	tcctggtcct	cgtcattcctg	3900
gtgactcagc	tactcagatg	gagagcagag	cgagagcct	tatccagcta	tgaagatgct	3960
cttgctgaag	ctgtgtatga	ggagctcgat	taccttctga	cacagaagga	aggtctgggc	4020
agcccagatc	agatgactga	tgtccctgat	gaaaattatg	atgatgctga	agaagtacca	4080
gtgcctggaa	ctccttctcc	ctctcagggg	aatgaggagg	aagtgcccc	agagaaggag	4140
gacggggtga	ggtcctctca	gacaggctct	ttcctgaact	tctccagaga	ggcagctaata	4200
cctggggaag	gagaagagag	cttctggctg	ctccagggga	agaaagggga	tgctgggtat	4260
gatgatgttg	aactcagtgc	cctgggaaca	tccccagtga	ctttctcg		4308

004250" E9082560